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[New York]

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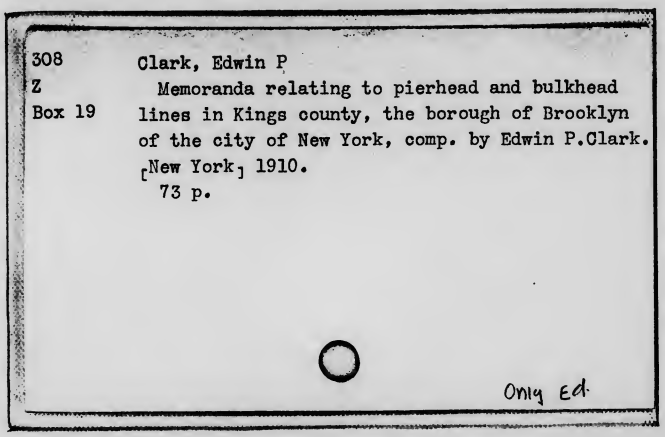
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MEMORANDA

RELATING TO

PIERHEAD AND BULKHEAD LINES

IN KINGS COUNTY
THE BOROUGH OF BROOKLYN
OF THE
CITY OF NEW YORK

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Box 19

MEMORANDA

RELATING TO

PIERHEAD AND BULKHEAD LINES

IN KINGS COUNTY
THE BOROUGH OF BROOKLYN
OF THE
CITY OF NEW YORK

COMPILED BY
EDWIN P. CLARK

TITLE GUARANTEE AND TRUST CO.
1910

E. P. Clark
GIFT
SEP 26 1911

NOV 6 1915

This compilation is intended to serve as a guide to the legislation, administrative acts, maps and other records relating to Pierhead and Bulkhead lines in the Borough of Brooklyn. Some reference to the reported cases bearing on the subject is also attempted. Where the detailed information is contained in readily accessible material such as the state statutes, and other printed books it has not been deemed necessary, in most cases, to give it here *in extenso*. The reference to maps is by their official number if they are filed in the Kings County Register's Office, the index number in parenthesis being that of the map as filed in the plant of the Title Guarantee and Trust Company. This work was prepared primarily for the use of the Company, but as it may be found to be of use to others interested in the subject, a list of such of the maps referred to as are not readily identified is appended, giving their titles more at length.

E. P. C.

November 15th, 1910.

ABBREVIATIONS.

A.—Atlas of Pierhead and Bulkhead Lines, Borough of Brooklyn. (Compiled from the maps of the Brooklyn water front prepared by the Department of Docks and Ferries.)
B.—Bulkhead Line or Lines.
C.—Brooklyn Compendium—John Dikeman Jr., 1870.
Ch.—Chapter.
D.—The Law of Waters, etc.—John M. Gould, 3rd Edit. 1900.
E.—Titles to Real Estate, etc.—James W. Gerard, 5th Edit. 1909.
F.—Notes on the Town of Brooklyn—Gabriel Furman, 1824 (as reprinted in his Antiquities of Long Island, 1875.)
G.—Title of the Corporation (New York City) to Streets, Wharves etc.—J. W. Gerard, 1872.
H.—Estate and Rights of the Corporation (New York City).—Murray Hoffman, 2nd Edit. 1862.
H. C.—Harbor Commissioners.
L.—Laws of the year.
M.—Statutes granting absolutely the State's title to land under water.
N.—Statutes granting conditionally the State's title to land under water.
P.—Pierhead Line or Lines.
R.—Old Road Book, or Road Records of Kings County.
S.—History of the City of Brooklyn.—Henry R. Stiles, 1867-1870.
S. F. C.—Sinking Fund Commissioners.
T. S. C.—Town Survey Commissioners.
U. S. Stat.L.—United States Statutes at Large.

PIERHEAD AND BULKHEAD LINES

IN THE BOROUGH OF BROOKLYN

I. ORIGINAL WATER LINES; PUBLIC LANDINGS; BROOKLYN LANDS BETWEEN HIGH AND LOW WATER MARKS; GENERAL STATE GRANTS.

The Borough of Brooklyn of the City of New York, which is coincident with the County of Kings, occupies the extreme westerly end of Long Island, and six-sevenths of its boundary line are contiguous to water surfaces. These surrounding bodies of water are—Newtown Creek—the East River, including Bushwick Inlet and Wallabout Bay—Buttermilk Channel—Upper New York Bay, including Gowanus Bay—the Narrows—Gravesend Bay, which is a part of the Lower New York Bay—the Atlantic Ocean—Sheepshead Bay—Jamaica Bay, with its numerous creeks, inlets and channels—and Spring Creek. This water line measures roughly about thirty-five miles in length. The shore, in its original condition, consisted for the most part of sandy beaches, of which that at Coney Island is the most celebrated, which, notably in Jamaica Bay, and sparsely in a few other places—such as Newtown and Gowanus creeks—were backed up by extensive marshes. Along the shores of the East River and the Upper New York Bay there were a few high sandy bluffs, particularly south of Fulton Ferry at Columbia Heights (the ancient Ihpetonga) and along The Shore Road from Owl's Head to Fort Hamilton. But in no part of this shore line does there occur any rock in place, the formation consisting entirely of glacial drift, and material derived therefrom by subsequent erosion.

The condition of this natural shore line remained practically unchanged for a long period prior to 1800, except on the Atlantic Ocean front at Coney Island and Barren Island where the action of the ocean currents has constantly effected considerable altera-

tion by accretion and erosion, but without much regularity, the effect varying from year to year, sometimes being in one direction, and then, during another period in the reverse direction, although the total aggregate movement appears to be towards the west: (see *Mulry* v. *Norton*, 100 N. Y. 424.) This process is still going on at the present day. A few artificial structures were erected along the Brooklyn shore, and in a few other places, prior to 1800, but they were quite small and insignificant.

This Original Water Line is shown on the following maps.—

The East River front, from near the mouth of Newtown Creek at about Manhattan Avenue, southerly to the neighborhood of Twentieth St., is very clearly and accurately shown on a "Plan of the City of New York in North America Surveyed in the years 1766 & 1767" by B. Ratzer "Lieut. in His Majesty's 60th or Royal American Regt." The relation of this water line to the subsequently imposed street systems is clearly delineated on a "Map showing the original high and low grounds, salt marsh and shore lines, in the City of Brooklyn" prepared by Col. Julius Adams to accompany the printed Report of the Board of Health of the City of Brooklyn for 1875-6, in which it was published. This map also shows the remainder of Newtown Creek to its head, which is not included on the Ratzer map.

The *Commissioners' Maps of Brooklyn* (1838) and *Bushwick* (1854) and the *Town Survey Commissioners' Map of Kings County* (1872-4) show fairly well the location of large portions of these lines at the dates of their preparation, at which time there probably existed but slight alterations from the original conditions in their respective areas. The *Harbor Commissioners' Atlas* also shows the original water lines in some places. For the old *Brooklyn shore* the following maps give some information:—"Map of the Shores of Brooklyn from the northwesterly point of Red Hook to the Westwardly side of the Navy Yard near the Wallabout" made Nov. 26, 1810, by Stephen Ludlam and Amos Corning, now on file in the Engineering Department of the Manhattan Bureau of Street Openings; and Atlases of the Brooklyn Water front from Fulton St. northerly and southerly made by Isaac T. and Silas Ludlam in the years 1829 to 1832 (incorporating data from the Ludlam and Corning Map of 1810, and the Loss Map of the Navy Yard of 1810) now on file in the Engineering Bureau of the Comptroller's office. See also the diagrams mentioned on page 11.

The original lines are somewhat imperfectly shown on a series of Maps of the various towns on the *western end of Long Island* made in 1797 and now on file in the office of the State Engineer and Surveyor at Albany. The lines in *Gravesend* are also shown on Terhune's Map of Gravesend (L110) and Lefford and Strong's map of the "Westward part of the Township of Gravesend," 1788 (U. 28).

A still cruder delineation of the original water lines for that part of the Borough extending from about *Fort Hamilton around Coney Island into* and along *Jamaica Bay* is shown on "A platt off ye situation of the towns & places on ye wester end of Long Island" "Laid downe by Cor Hubbard July 3, 1666" now in the State Library at Albany, a facsimile of which is published in Vol. XIV. of Documents relating to the Colonial History of the State of New York.

The shore lines are also shown on many of the *farm maps*, but these must be consulted with discrimination, particular attention being given to their dates, as, in many cases, they indicate water lines which are not the original ones, but are the results of artificial filling in, or, possibly in some cases, only in contemplation.

One of the earliest public necessities felt by the inhabitants of Kings County was adequate means for facilitating inter-communication, especially with the "City" on Manhattan Island. As a large part of this communication was by water, provision was necessary for landing places, particularly for those, who, by not owning land on the water front, could not land on their own property. Consequently the first regulations relating to the water line appear to have been the establishment of **Public Landings.** A few of these are still in use; others are in existence, although possibly very little used; while others have passed out of existence and use entirely. Some have been established within comparatively recent times.*

Probably the first public dock in the County was established in connection with the "Old Ferry" at the foot of the present Fulton St.; this ferry was in existence as early as 1642, and the condition of the dock in 1746 is shown on a well known old print a copy of which is presented in S. III, p. 505.

Such of these landing places as have come to our notice are enumerated in the following list:—

* As to public landings in the Kings County Towns see Ch. 386 L. 1868; also *Pearsall* v. *Post*, 20 Wend. 111, 22 Wend, 425; D. p. 198.

Brooklyn: (See S. III, p. 573.)

1. At the easterly end of the Wallabout Bridge, near the present corner of Flushing Ave. and North Portland Ave.. In existence as early as 1762 (see Liber 6 cp. 65 and 67); established as a public landing by the purchase of the Fort Greene Poor House Farm Nov. 1, 1824—Liber 16 cp. 423. Map No. 113 (S. 11).—(See S. II, p. 218-219.)

2. Three acres adjoining the Wallabout Mill Pond and land of John Rapelje; possibly at Remsen's Mill.

3. Land and wharf of David Anderson and others at the foot of Dock St..

4. At Fulton Ferry.

5. At the foot of Doughty St.; 18 ft. 8 in. wide; established May 13, 1763 and resurveyed Nov. 29, 1799 when it was found to be lessened in width by a building which was ordered removed. (S. II, p. 119.)

6. On the East River between Clark and Pierrepont Sts. on the Kingston lot, afterwards owned by Samuel Jackson. (S. II, p. 131.)

7. At the foot of Joralemon St., Apr. 15, 1718.

8. Patchen's Landing, 6 rods wide at low water, on the East River at the foot of (District) Atlantic St.. Laid out Apr. 7, 1714. (S. II, p. 154; F. p. 324.)

9. On Gowanus Creek at Freecke's (formerly Brower's) Mill; near present corner of Union St. and Gowanus Canal. Laid out Mch. 28, 1704. (S. II, p. 178; F. p. 322-3.)

10. On Gowanus Creek at Nicholas Brower's new mill, (afterwards Denton's); on Carroll St. west of Third Ave.. Laid out May 12, 1709. (S. II, p. 178; F. p. 323-4; R. p. 106 (107)).

11. On Gowanus Bay on the Simon Bergen farm near the foot of Thirty-sixth St..

All these landing places have long since become obliterated by the filling in of the adjoining land under water. At some of them, docks or bulkheads were erected, and the Ratzer Map of 1766-7 shows very clearly, Nos. 2, 3, 4, 6, 7, and 8 and hints at Nos. 5, 9 and 10. This map also shows docks, which were probably private property, at the following points:

a. Somewhat south of the foot of the present Division Ave..

b. Near the foot of Gold St.; and also

c. A landing at the Seabring-Cornell mill, near the foot of Harrison St.

The Ratzer Map also shows what look like landing places, (whether public or not we cannot say) at two points in

Bushwick.

d. At the foot of the old Kyckout Road, between South Ninth and South Tenth Sts., and

e. Near the foot of North Fifth or North Sixth Sts..

There is also said to have been an ancient public landing on the west branch of Newtown Creek at Luqueer's Bushwick mill, which mill was in existence as early as 1664. (S. II, p. 377.)

New Utrecht.

12. At Yellow Hook, some where near the foot of Bay Ridge Ave., where there was a ferry prior to 1747 according to a deed in Liber 6 cp. 72.

13. In early colonial times and up to the time of the Revolution, travel from New York City to the southern colonies passed through Brooklyn, Flatbush and New Utrecht and crossed the narrows at Denyses's, formerly Hendricks' Ferry, which was located on property now included in the U. S. Government reservation at Fort Hamilton. This ferry was in existence as early as 1679 (see C. p. 180) and the landing place is mentioned in R. p. 113 under date of Aug. 14, 1715. It is shown on a print in the Brooklyn Corporation Manual for 1867 p. 470. (See *Cortelyou* v. *Van Brundt,* 2 Johns. 357.)

Gravesend.

14. Town Landing at Gravesend Beach, at the foot of the Old Mill Road, near Bay Forty-Ninth St., Oct. 1706; R. p. 109—see Map (H. 55). Extended by adding a piece on the south Mch. 13, 1873—see map made by McElroy in 1872 in the Commissioner of Records office. Also known as the Manure Landing.

15. At the west side of Gerritson's Mill Pond, south of the mill, between Aves. V. and W. Laid out Jan. 21, 1868—see maps (Y 47) and (II 1).

Flatlands.

16. A common landing place at the "second clam shell bank" on the east shore of Bergen Island, near the end of Ave. U. or V. Apr. 7. 1714. R. p. 111 (108).

17. On the east side of the Paerdegat Creek between Aves. K. and L; a private landing established by deed between Rem Martense and William Kowenhoven, Mch. 29, 1804. Liber 1 p. 85 unrecorded deeds in the Commissioner of Records office.

18. At the foot of the old Canarsie Road, now Rockaway Ave.. May 16, 1720. R. p. 119.

New Lots.

19. "One common Landing Place at ye mill of Dominicus Vanderveer," on the west side of Fresh Creek near Ave. J. June 7, 1718. R. p. 117 (116).

20. At Van Wicklen's Old Mill, near the corner of Vandalia Ave. and Crescent St.. Established prior to 1846—see Ch. 242 L. 1846—and still in use; shown on Palmer's Extension of the T. S. C.'s Map.

There may also have been landings, more or less public, at the various mills, of which there were quite a number in Kings County in addition to those already mentioned, such as Schenck's in Bushwick—the two Van Dyke mills at Red Hook—Luqueer's and Cole's near Gowanus Creek—Voorhees' (Harway's) and the Town Mill in Gravesend—Schenck's on Mill Island in Flatlands —and Stephense's on Spring Creek in New Lots.

Since the introduction of the street systems there have been a few public docks or wharves authorized by statute, such as:

North Second St. Pier by Ch. 440 L. 1892, and Ch. 657 L. 1895.

Pier between 43rd and 44th Sts. by Ch. 160 L. 1893.

The Corporation of the **City of New York** obtained from Lord Cornbury, the Colonial Governor, a charter (given in full in Ash's Greater New York Charter—3rd Edit. p. 1174 to 1177; see also C. p. 148; G. p. 35, 48, 49, 279-281; H. I. p. 159-162, 278-280, II. p. 47-48, 145-150; and F. p. 423-432.) dated Apr. 19, 1708, in which they were **granted** the "Old Ferry," and, as a protection against the establishment of any competing ferries, "also, all that the aforesaid vacant and unappropriated **ground,** lying and being on the said Nassau Island (alias Long Island), **from high water mark to low water mark,** aforesaid, contiguous and fronting the said City of New York, from the aforesaid place called the Wall-about to Red Hook aforesaid; that is to say, from the east side of the Wall-about, opposite the new dwelling house of James Bobine, to the west side of the Red Hook, commonly called the Fishing place." This grant was confirmed by the Montgomerie Charter, dated Jan. 15, 1730, an act of the Colonial Legislature of Oct. 14, 1732, and various later acts and state constitutions. (See G. p. 35-40, 282-284; H. II p. 24; and Ash's Greater New York Charter—3rd Edit. p. 1178 to 1214.)

This grant and claim of ownership of the land between the high

and low water marks was the subject of a great amount of controversy in former years (see G. p. 48-50, 58-60; H. I p. 159-180: F. p. 301-304; S. III, p. 517-520) but has ceased to be of such vital interest at the present day because of the fact that the City of New York has conveyed all of these lands, not included within the lines of streets, to private parties. A list of these conveyances is given in C. p. 173-179. Most of them contain diagrams which are very helpful in locating the original water lines.

The **colonial charters** of the towns of Gravesend, Flatlands and Flatbush (which originally included New Lots) are held in some quarters to be absolute grants to these towns of the contiguous lands under water in Gravesend, Sheepshead and Jamaica Bays respectively, and it is contended that under these charters the title of the towns is paramount to that of the State, (see *Trustees of Brookhaven* v. *Strong,* 60 N. Y. 56; *Southampton* v. *Mecox Bay O. Co.,* 116 N. Y. 1; *People ex rel. Howell* v *Jessup,* 160 N. Y. 249; *Sandiford* v. *Town of Hempstead,* 186 N. Y. 554; *Lowndes* v. *Huntington,* 153 U. S. 1.) For the contrary view as to Jamaica bay see *Rockaway Park Impt. Co.* v. *City of New York.* App. Div. New York Law Journal, Oct. 14, 1910. These towns have heretofore exercised their rights of ownership by making leases and grants of land under water. The City of New York is now the successor of these town rights and also has been vested conditionally with the State's title to lands under water in Jamaica Bay by Ch. 568 L. 1909. It is deemed to be the wiser course to require title to all these lands under water to be derived from both sources—the town (or city) and the State—particularly in Gravesend Bay. The originals of these colonial patents (except those of Flatlands) are in the custody of the Commissioner of Records; they are all also recorded in Vols. IV and V of Patents in the Office of the Secretary of State, and have been reprinted in convenient form in a pamphlet published by the Law Department of the City of New York, but it is to be noted that comparison with the originals indicates that the record at Albany is not wholly reliable.

Power to **grant** the title **of** the State to **lands under the waters** surrounding Long Island to the "proprietor of the adjacent lands" (see *Rumsey* v. *N. Y. and N. E. R. R. Co.,* 114 N. Y. 423; *Blakslee Mfg. Co.,* v. *Blakslee S. I. Works,* 129 N. Y. 155; D. p. 85 etc.,) and to authorize the erection of docks etc., was conferred on the Commissioners of the Land Office by Ch.

232 L. 1835 and Ch. 283 L. 1850, passed "by a two-third vote," (C. p. 153). The general powers of the Commissioners of the Land Office are set forth in Part I Chap. IX. Tit. V. Art. 4 of the Revised Statutes, and are now embodied in the Public Lands Law, Ch. 317 L. 1894 being Chap. 11 of the General Laws. (G. p. 18-26.) Acting under these powers the Commissioners have granted lands under the waters surrounding Kings County to private owners in many individual cases. Such of these grants as were made prior to 1861 are set forth in C. pp. 149-172, 181-184. The Greater New York Charter—Ch. 466 L. 1901—grants to the City all lands under water forming the extension of streets—sec. 83, (see *People* v. *Lambier*, 5 Denio 9; *Matter of City of Brooklyn*, 73 N. Y. 179); and prescribes certain regulations affecting all future grants to riparian owners and the City—sec. 86, (*People ex. rel. City of N. Y.* v. *Woodruff*, 166 N. Y. 453.) See generally—D. Chap. II; E. p. 933 to 944; Fowler's Real Property Law, 3rd Edit., p. 95 to 102; *U. S.* v. *Ruggles*, 5 Blatch, 35—H. II, p. 114-116.

Inasmuch as the county of New York has been described in the early charters and the statutes as extending to the low water mark on the Brooklyn shore between Newtown Creek and Red Hook, it is deemed wiser by some authorities to consider all lands under water between the above limits to be situated in both Kings and New York counties so far as all questions of jurisdiction and notice under the recording acts are concerned. (See Ch. 410 L. 1882 sec. 1, and citations in Ash's annotated edition; G. p. 41-43, 56, 57; H. I. p. 79-83, II. p. 33-36; also *People* v. *Schermerhorn*, 19 Barb. 540.) It has been held, however, that this boundary line is to be understood to be the actual line of low water as extended into the East River by the filling in of the land under water, by either natural or artificial means.—See cases cited in Ash, particularly *Luke* v. *City of Brooklyn*, 43 Barb. 54 and *Orr* v. *City of Brooklyn*, 36 N. Y. 661.

The earlier statutes dealing with the establishment of water lines have been in the general form of authorizations to private parties to *"erect, fill in, keep and maintain bulkheads, docks, wharves"* etc. Subject possibly to constitutional limitations,* these

* "The assent of two-thirds of the members elected to each branch of the legislature, shall be requisite to every bill appropriating the public moneys or property, for local or private purposes." Constitution of 1894, Art. III, sec. 20—1846, Art. I, sec. 9—1821, Art. VII, sec. 9. If the presiding officers certify that the statute was passed by a two-thirds vote it is to be so printed in the statute book.—Ch. 306 L. 1842 and amendments; Legislative Law, Ch. 37 L. 1909, Art. III, sec. 44. When the statute book is silent the journals of the houses may be received in evidence to show that the acts actually received a two-thirds vote.—*Matter of New York and Long Island Bridge Co.*, 148 N. Y. 540. See G. p. 17, 62, 63.

acts have been held to be grants in fee of the State's title, where the work of filling in, etc., has actually been done. (D. p. 274-5). See the following leading cases:—

Wetmore v. *Atlantic White Lead Co.*, 37 Barb. 70.
Wetmore v. *Brooklyn Gas Light Co.* 42 N. Y. 384.
Steers v. *Brooklyn.* 101 N. Y. 51.
Williams v. *Mayor*, 105 N. Y. 419.

See also G. p. 50-56. It has been held that subsequent acts restricting the lines established by previous acts practically repeal these earlier acts *pro tanto* and thus curtail the grants effected by them correspondingly. *People* v. *Vanderbilt*, 26 N. Y. 287.

Some of the later statutes defining B. and P. also grant in specific terms the State's title to the land under water to the adjoining owners. These statutes are distinguished hereinafter by the letters M, indicating such as are absolute grants, and N, indicating such as grant lands upon some condition or contingency, it being assumed, *as a principle of classification only*, that those statutes which authorize the owners of the upland to "erect and maintain docks, and to fill in" etc., are grants conditional upon thus erecting and filling in, and are grants in fee only to the extent that the condition has been complied with.

II. PRIVATE DOCKS; FRAGMENTARY WATER LINES; CANALS AND BASINS.

Prior to the enactment of legislation dealing with the subject of the establishment of P. and B. on a comprehensive general plan, lines were established along portions of the East River front, and permission was granted by statute to several individuals to erect docks at various places. There have also been established various interior canals and basins, supplemental to the general plan, which will be described in this section.

Greenpoint.—*Permanent Water Line.*—Neziah Bliss and others authorized to build docks and fill in land under water, and a B. established extending *from Freeman St. to Bushwick Inlet;* shown on Map No. 318, (Y 68) and A. plate 3. Fully described in C. p. 118.—Ch. 302 L. 1849—N.

The title of the State to "all lands formerly under water and made and gained out of the East River" in pursuance of this act, but *only* to the B. as "now established by law," (that is to say,

the H. C.'s B. of 1857 which was considerably *inside* of this line of 1849) was granted to the respective owners of the adjoining upland by Ch. 305 L. 1868, "by two-thirds vote"—M., and Ch. 518 L. 1880, "by two-thirds vote."—M. See *Steers* v. *Brooklyn*, 101 N. Y. 51.

The *Commissioners' Map* of the northerly part of the Town *of Bushwick*, filed Apr. 14, 1854, shows this same line, with a direct extension thereof northerly to a point about 770 ft. north of the northerly side of Freeman St., where it intersects a line in Newtown Creek which is at the following approximate distances from the north side of Commercial St.:—

At the	west	side	of	Blue	St.		544	ft.
"	"	"	"	Pink	"		529	"
"	"	"	"	Bell	"		514	"
"	"	"	"	Ann	"	(now closed)	500	"
"	"	"	"	Dick	"	" "	485	"
"	"	east	"	" Eve	"	" "	470	"

This extended line, and its intersecting line, do not seem to have been mentioned in any other connection, and probably they have no authoritative status whatever.

Williamsburgh.—*Between North Third and North Sixth Sts.* Philip Harmon and Edmund Frost authorized to erect, fill in, etc., "not exceeding four hundred feet from high water mark." Ch. 321 L. 1833—N; C. p. 108.

Permanent Water Line.—John L. Graham and others authorized to erect, fill in, etc., out to a B. extending *from Bushwick Inlet* (85 ft. south of North Thirteenth St.) *to the Brooklyn line* (about 150 ft. north of Division Ave.,) shown on Map. No. 508 (Y 73), and A. plate 3. Fully described in C. p. 109-110—Ch. 128 L. 1835—N.

The persons named in this act were not all of the owners of the water front shown on the map. A portion of the territory was owned by Harmon and Frost or their grantees, who acquired rights by the act of 1833. Practically all of the remaining owners, *Obadiah Newcomb and others*, were accorded the same privileges by Ch. 272 L. 1848, "by two-thirds vote"—N; C. p. 117.

This line was extended northerly to the *Permanent Water Line of Bushwick Inlet*, which was established as shown on Map No. 674 (V 19). This line was parallel with and about 183 ft. 10¾ in. north of the north side of North Thirteenth St.. *Paul J. Fish and others* were authorized to erect, fill in, etc., to these lines. Fully described in C. p. 113—Ch. 371 L. 1837—N.

Williamsburgh Ferry Co.—Between South Sixth and South Eighth Sts., to a line 65 ft. "from the front of the present largest pier on said property"—Ch. 297 L. 1853—N; C. p. 122.

Brooklyn-Wallabout Bay.—*Heirs and Devisees of Abraham A. Remsen and Abraham Boerum—From the Williamsburgh Line* (North of Division Ave.) *to the Wallabout Canal.* "Not exceeding one hundred feet beyond low water mark"—Ch. 209 L. 1849—N; C. p. 117.

Navy Yard.—Jurisdiction ceded to the United States out to a line described in the Act—Ch. 355 L. 1853—See Map (R22).

Brooklyn-Navy Yard to Atlantic Ave.—*Between Jay and Adams Sts.*—The Commissioners of the Land Office empowered to grant lands under water.—Ch. 97 L. 1830; C. pp. 108 and 149.

Obadiah Jackson.—From Fulton St. to a point between Middagh and Cranberry Sts.—For portions only.—Ch. 23 L. 1836.—N; C. p. 110-111.

Jonathan and George W. Thompson.—From a point between Middagh and Cranberry Sts. to Orange St.—Ch. 106 L. 1835.—N; C. p. 109.

Hezekiah B. Pierrepont.—From a point about 200 ft. north of Pierrepont St. to Remsen St.—Ch. 78 L. 1835.—N; C. p. 108.

Permanent Bulkhead Line.—Provides for the appointment of Commissioners to locate a B. *from Atlantic St.* "to a point at or opposite to the dock next easterly from Jackson Street (now *Hudson Ave.*) ferry," which point was determined in later years to be 309 ft. north from the north side of Marshall St., on a line perpendicular thereto, from a point 72 ft. east of the east side of Hudson Ave.—Ch. 484 L. 1836, sec. 2; C. p. 112. (See S. II, p. 251-2).

The Commissioners who had in charge the preparation of the Commissioners' Map of Brooklyn were appointed Commissioners under this act. They made a report, dated Dec. 31, 1838, filed Jan. 7, 1839, and confirmed by Ch. 41 L. 1839, in which they established a B. fully described in C. p. 112 (Sec. H. I. p. 167-168; G. p. 52). This same line was established by Ch. 156 L. 1848—N; C. p. 116, and the adjoining owners of the upland authorized to erect, fill in, etc., out to it. The same authorization was granted by Ch. 313 L. 1850.—N; C. p. 119 which amended the act of 1848 by indefinitely referring to this line as "the permanent water line established by law for the construction of bulkheads." Both of these acts are stated by the statute book to have been passed with "three-fifths being present." (See the Wetmore cases noted

above and G. p. 53, 61.) This line is shown on Maps (Y44) and (I128), and remains as the B. to the present day.

Samuel Bowne.—Between Washington and Main Sts.—Authorized to erect, etc., out to the permanent water line established under the act of 1836, and granted the land under water for that purpose. Also authorizes the Commissioners of the Land Office to grant other lands under water out to this line.—Ch. 239 L. 1843.—N; C. p. 114.

Pierhead Line.—From the dock next east of *Hudson Ave., to Atlantic Ave.* This line was also recommended by the Commissioners appointed under the act of 1835. Between Hudson Ave. and Fulton St., it was considerably outside of the P. subsequently established by the H. C. in 1857. Fully described in C. p. 121-2.—Ch. 270 L. 1853.

Brooklyn.—Atlantic Ave. to (Partition) Coffey St.—*Henry Patchen and others* authorized to erect, etc., out to a B. fully described in C. p. 111. This remains to the present day as the B. between Atlantic Ave., and Harrison St., and is shown on Map (Y44) and (I128).—Ch. 484 L. 1836, sec. 1—N.

Bulkhead Line.—Between Harrison and (Partition) *Coffey Sts.*. Somewhat modifies the line of 1836, and remains to the present day as the B. between Harrison St. and Hamilton Ave.. Shown on Maps (Y44 and I128).—Ch. 268 L. 1841-N; C. p. 114. (See S. III, p. 578-9.)

Pierhead Line.—From Atlantic Ave. to a point 100 ft. south of Hamilton Ave. 250 ft. "outside of the water line as at present established." The persons named are "authorized to erect or construct piers or *bulkheads* in front of and adjoining their lands." This act does *not* authorize filling in in specific terms, and it appears to have been considered that it in effect extended the P. only and not the B.—Ch. 271 L. 1847; C. p. 116.

Brooklyn—(Partition) Coffey St. to Twenty-seventh St.—*Daniel Richards and others.—From Coffey St. to Hamilton Ave* at Gowanus Canal. Authorized to erect, etc., out to a B. fully described in C. p. 115-6; also to construct breakwaters. Shown in green lines on Map (I131), and also partly on the Daniel Richards Maps No. 356 (U4) and Map in Liber 219 cp. 340 (DD33).—Ch. 202 L. 1847-N.

William Beard and others.—Between Conover and Columbia Sts.—Authorized to erect, etc., out to a B. which is an extension of part of that established by the previous act; also to construct a breakwater. Shown in red lines on Map (I131).—Ch. 83 L. 1851-N; C. p. 119-120.

Bulkhead Line.—From a point in *Henry St.* about 175 ft. north of the sea wall *to Hamilton Ave.* at Gowanus Canal. Owners of land fronting on the water authorized to erect, etc.. Shown in red lines on Map (I131) and partly on Daniel Richards Map No. 567 (V3).—Ch. 184 L. 1851-N; C. p. 120-1.

New Utrecht.—*Richard Pennell* authorized to erect a dock adjoining his land at the Narrows (foot of *Third Ave.*) not exceeding 400 ft. from high water mark, and not over 100 ft. wide.—Ch. 132 L. 1834-N.

New Utrecht Dock and Steamboat Co. authorized to erect a dock "on the shore of New Utrecht Bay, at the termination of the road leading from opposite to the Dutch Church, to the shore of said bay"; at the foot of *Seventy-ninth St.*—Ch. 533 L. 1836-N.

The Bath Dock Co. authorized to erect a dock "extending into the bay, at the termination of the highway leading from New Utrecht Village to the bay at Bath" at the foot of *Bay Nineteenth St.*—Ch. 501 L. 1870-N.

Flatlands—Canarsie.—*The Brooklyn and Rockaway Beach Railroad Co.* authorized to establish a ferry across Jamaica Bay and to "construct and maintain such piers, wharves and docks, or other structures upon the waters of said bay, as may be required for the convenient operation of said ferry."—Ch. 172 L. 1864, "by two-thirds vote"—N.

The following **Interior Canals and Basins**—all of which were initiated before the State established its comprehensive control over water lines by the appointment of the H. C.—have been developed independently of the general system, which has not attempted to interfere with them.

The first canal of which we have any knowledge connected Gowanus Cove with the East River in the neighborhood of Van Brunt and Bowne Sts.. It was constructed about 1664 in order to avoid the "perilous navigation" around Red Hook Point and was known as **Bull Creek.** It is shown on the Ratzer Map, and its history is related in S. I, p. 67-9. This canal has long since disappeared by reason of the development of the district through which it extended. An attempt was made to perpetuate it under a scheme set forth in Ch. 262 L. 1837 by which the City of Brooklyn was authorized to construct a canal from the water line at the foot of Delevan St. easterly to "the mouth of Bull Creek"; but nothing seems ever to have been done to carry this out.

Whale Creek Canal.—This is shown on the Commissioners' Map of the northerly part of Bushwick—1854—as extending, 100 ft. wide, from Newtown Creek southerly to Meserole Ave.. By Ch. 513 L. 1894 the City of Brooklyn was authorized to close it between Greenpoint and Meserole Aves., and to lay out another canal, also to be known as Whale Creek Canal, from Newtown Creek at a point south of Greenpoint Ave., westerly to Humboldt St., substantially on the line of a small natural creek existing there. This was done by a resolution of the Common Council of Dec. 2, 1895. That part of this last mentioned canal between Humboldt St. and the east side of Kingsland Ave. was closed by a resolution of the Board of Estimate and Apportionment approved by the Mayor Jan. 22, 1907. That part of the main canal from Newtown Creek to Green St. has been widened 30 ft. on the east side as part of a scheme now being developed by the Dock Department which also contemplates the construction of piers, with basins 150 ft. wide between them, extending back to Green St., between the Canal and North Henry St. Shown on Map (I142).

Wallabout Canal and Basin and Kent Avenue Basin.—By Ch. 328 L. 1838 The Wallabout Canal Co. was incorporated (for 25 years) to construct a canal from Wallabout Bay to Kent Ave., and the Brooklyn Map Commissioners were directed to "survey and designate the line of said canal from the channel in the Wallabout Bay to Kent Ave.," "and also to survey and designate a line for the construction of said canal along the Wallabout valley to the line of the village of Williamsburgh." Apparently nothing was ever done by this corporation and the Commissioners' Map does not show any such canal. The Wallabout valley was occupied by Wallabout creek, (the ancient Rinnegaconck), which started somewhere near the corner of Harrison Ave. and Wallabout St., and flowed westerly approximately along the line of Wallabout St. to Classon Ave. and thence northwesterly through the present Kent Ave. Basin to near Washington Ave., where it met the high water line of the bay. That portion of this canal scheme easterly from Classon Ave. was incorporated in the laying out of River St. by Ch. 163 L. 1848; C. pp. 77 and 92, and Ch. 191 L. 1856; C. p. 92, but was definitely and finally abandoned by the alteration of River St. to the lines of the present Wallabout St. by Ch. 433 L. 1859; C. p. 92-3.

The original location of the creek west of Classon Ave., and of the high and low water lines in the bay are shown on Map (R22).

In 1846 the United States Government entered into an agreement with Abraham A. Remsen to fix the boundary line between their respective lands from the mouth of the creek—near Wilson St.—to the bay. The commissioners appointed under this agreement made a report dated May 4, 1848, accompanied by a map, which are filed together in the Register's Office; Map No. 445 (T25). They recommend, that, as the creek is a public navigable stream and the outlet of water for a large territory and therefore should not be closed, that it be kept open by the parties to the agreement to the width of 60 ft. and that no obstructions be permitted in it.

It would appear from a map of the U. S. Naval Hospital property surveyed by Willard Day in Jan. 1849 (now in the Topographical Bureau), the map attached to a deed in Liber 686 cp. 265 (1865), and the Kent Ave. Basin opening maps that some kind of a canal was constructed along the creek as far up as Penn St. several years ago, and that the U. S. Government had a line of piling along its southwest side. This was called "Hospital Canal" or "Hospital Creek Canal," and was probably principally for drainage purposes. On July 2, 1864 Congress passed an act—13 U. S. Stat. L. p. 354, Ch. 212—authorizing the Secretary of the Navy to negotiate with the City of Brooklyn for the exchange of lands in Wallabout Bay. The City was authorized to enter into the negotiation by Ch. 732 L. 1865, and took action under a resolution of the Common Council dated Sep. 25, 1865, which resulted in conveying to the U. S. Government Vanderbilt and Clinton Aves., north of Flushing Ave., and a part of the old Williamsburgh Road running through the Naval Hospital grounds; in exchange the Government conveyed to the City a strip of land for the extension of Washington Ave. north of Flushing Ave., and a plot west of Washington Ave., immediately south of the creek fronting 372 ft. 2½ in. on the bay. See deed dated Dec. 21, 1865, Liber 686 cp. 265 and the map annexed thereto (H103).

In 1867 Commissioners were appointed "for the improvement of lands in and near Wallabout Bay, and for laying out and constructing a basin, dock and streets therein." They were to construct Washington Ave. as thus extended; to build a bridge over the creek; and to build the basin and docks on the lands acquired from the U. S. according to plans which they were to adopt. They were also authorized to negotiate further with the National Government for other land east of Washington Ave.

in order to extend (Houston) Hall St., instead of Washington Ave., which, it was deemed, would have been a more economical project. This alternative scheme, however, was never consummated and the original plan was proceeded with to completion:—Ch. 893 L. 1867. See also Document 45, Board of Aldermen, City of Brooklyn, for 1877, pp. 1133-1156.

The Commission authorized to fix and construct the wharf line on the north side of the canal at Washington Ave., to construct a bridge of 45 ft. span, and to proceed with the construction of one or more piers in the basin west of Washington Ave.—Ch. 69 L. 1868.

The Commission authorized to construct the **Kent Ave. Basin** "along the course of Wallabout Creek or nearly so from Washington Ave. to Hewes St.," to be not less than 60 ft. wide, and to "run as nearly parallel with Kent Ave. as practicable." Also authorized to negotiate with the U. S. Government and other persons for additional land on the southwest side so as to make the basin 100 ft. wide, and to lay out a street (Wallabout Pl.) 60 ft. wide, adjoining it on the southwest.—Ch. 548 L. 1868.

This negotiation resulted in acquiring additional land from the United States of America, and James S. Rockwell by deeds dated May 23 and 27, 1870, and recorded in Liber 955 cp. 220 and 224, by which the above mentioned enlargement of the basin and establishment of Wallabout Pl. were rendered feasible.

By Ch. 514 L. 1870 the Commission was directed to complete the work "without delay," to report to the Common Council in June next as to the financial elements of the project, to file their records in the Comptroller's office and turn over to the City such portions of the work as were completed. Their reports dated June 6, 1870 and Oct. 6, 1873 will be found in the minutes of the Board of Aldermen for 1870, vol. I, p. 804, and 1873, vol. II, p. 659. See also S. III, p. 585.

Some difficulties arose in reference to the old bulkhead on the north side of the basin between Taylor and Wilson Sts., which was permitted to remain unaltered by Ch. 358 L. 1869, but which was subsequently directed to be placed on the proper line of the canal by Ch. 377 L. 1874, which act also directed the Commission to complete their work and turn over the whole matter, with their records, to the City on Aug. 1, 1874.

The City of Brooklyn, having purchased the land east of Washington Ave. for market purposes in 1891, determined to

acquire the remaining unused Government land west of Washington Ave. also, for the same purposes, having been authorized to do so by Ch. 446 L. 1890 and Ch. 319 L. 1892; the concurrence of the National Government being given by an act of Congress of Dec. 22, 1892—27 U. S. Stat. L. p. 407, Ch. 9. This resulted in the United States of America conveying to the City of Brooklyn the land west of Washington Ave. as far westerly as a line near Clinton Ave., by a deed dated June 9, 1894 and recorded in Liber 2243 cp. 421.

The Commissioner of City Works of the City of Brooklyn was authorized to prepare plans and proceed with the construction of "canals, basins, bulkheads, wharves, piers," etc., on this property—Ch. 319 L. 1892; Ch. 876 L. 1896; Ch. 529 L. 1897. In accordance with this authority the Department of City Works laid out six piers (two of which were to take the place of the two formerly built) in the Wallabout Basin west of Washington Ave., which were to extend to a P., established by the Department Aug. 7, 1897, which left a channel 150 ft. wide between the ends of these piers and the Clinton Ave. bulkhead opposite.

The United States was authorized to close the Wallabout Channel by a causeway at the westerly side of the City property by Ch. 668 L. 1893. The consent of the City was given by a resolution of the Common Council of Feb. 20, 1893.

Atlantic Docks.—*The Atlantic Dock Co.* incorporated for the purpose of erecting docks, etc.—Ch. 215 L. 1840; C. p. 114. The company proceeded to construct a large basin between India Wharf and William St., west of Conover St., and to build warehouses around it. It was the first, and for a long time the only, large docking enterprise in the County. The history of its development, in which Daniel Richards and J. S. T. Stranahan were the moving spirits, is interestingly outlined in S. III, p. 575 to 580.

Pacific Docks, Erie Basin, and Brooklyn Basin.—Will be described later in connection with the changes of lines at Red Hook.

Gowanus Canal.—This canal occupies the valley of the old Gowanus creek, a very tortuous tide-water estuary, which served as the drainage outlet for a large section of Brooklyn. Portions of it were dammed up at an early date to create tide-water mill ponds. Its original situation is shown on the Ratzer Map, and that part of it north of Carroll St. on a map in Liber 42 cp. 412 (S. 33). When the development of the surrounding territory

for city residential purposes became extensive the problem of drainage became of great practical importance and was first dealt with in a report made in 1847 by Major David B. Douglass, Engineer of the Croton Water Works, "On the Drainage and Graduation of that part of the City of Brooklyn which lies over, and adjacent to, the Gowanus Meadows," in which he submitted two plans:

"*First,* by excavating one or more basins near the head of the meadows, and connecting it, or them, by a channel way (navigable or otherwise), with Gowanus Bay. *Secondly,* by cutting a navigable canal through and through, from Gowanus Bay to the Wallabout."

Thorough investigation developed the impracticability of the second plan, and the first one was carried out instead.

The City of Brooklyn was authorized to lay out the Gowanus Canal, 100 ft. wide, extending northerly from Hamilton Ave., according to a description which is set forth in detail in the statute, and which has not been materially altered since; it included, however, a basin 300 ft. long on the south side of Butler St. which was never constructed.—Ch. 79 L. 1849-N; C. p. 83-84. (See S. II, p. 283.)

By this statute adjoining owners were authorized to construct basins connecting with the canal. It also provided that they might do the work of excavation and construction at their own expense and erect bulkheads, etc.; amended as to this point by Ch. 431 L. 1855-N.

Commissioners appointed "for improving Gowanus Canal and the channel in Gowanus Bay from the mouth of said Gowanus canal to and beyond the bar at or near Percival St."—Ch. 678 L. 1866.

Brooklyn Improvement Company incorporated and authorized to construct bulkheads, basins, etc., along Gowanus Canal, and upon adjacent lands.--Ch. 857 L. 1866-N; C. p. 142.

Acting under the authority of this statute and its amendments—Ch. 888 L. 1867 and Ch. 663 L. 1871—this company has constructed the Fourth St., Fifth St., Sixth St., and Seventh St. basins See S. III, p. 582-3.

Basin authorized in Eleventh St. up to Second Ave. (only partially constructed.)—Ch. 484 L. 1868.

Basin authorized in First St. to within 50 feet of Third Ave.—Ch. 200 L. 1872.

[See Report by George Ingram, consulting engineer, dated

Sept. 9, 1889, and a Brief on the question of closing Gowanus Canal, both on file in the office of the President of the Borough of Brooklyn.]

III. HARBOR COMMISSIONERS' LINES AND THEIR ALTERATIONS; BOARD OF UNITED STATES ENGINEERS; TOWN SURVEY COMMISSIONERS' MAP.

Harbor Commissioners.—As early as 1824 the question of encroachments on the navigable waters of the harbor by the filling in of land below the high water mark engaged the attention of the State authorities as is indicated by a reference to the subject in the annual message of Governor Yates (S. II, p. 211). The enactment of Ch. 270 L. 1853, extending the P. between Hudson and Atlantic Aves., seems to have awakened renewed interest in the subject, and aroused a fear that the restriction of the width of the East River would result disastrously. An investigation of the subject was started by the legislature whose committee of commerce and navigation rendered a report (Sen. Doc. No. 49, 1854) dated Feb. 10, 1854, in which they advocate the appointment of a commission to deal with the question and to establish harbor lines. In accordance with this recommendation an act was passed in the following year—Ch. 121 L. 1855; C. p. 123—"for the appointment of a commission for the preservation of the harbor of New York from encroachments, and to prevent obstructions to the necessary navigation thereof." The commissioners were directed to have the necessary surveys and examinations made in order to thoroughly investigate the conditions and positions of the existing docks, wharves, piers and bulkheads, the water grants which had been made, and the location of the original shore line; and to report to the legislature with maps, field notes, and recommendations for the establishment of permanent P. and B. The act also temporarily prohibited any further grants of lands under water by the Commissioners of the Land Office, which prohibition was repealed by Ch. 360 L. 1858. The Commissioners were duly appointed and at once proceeded to secure the services of the U. S. Coast Survey which made for them a full and complete original survey of the Harbor, based on which they prepared an atlas to accompany their reports.

The Commission (whose duties and powers had been continued by amendatory acts) made its reports, dated January

8 and 26, 1856 (Sen. Doc. Nos. 3 and 25, 1856) and January 27, and March 18 and 20, 1857 (Sen. Doc. Nos. 40 and 126, 1857)*, which were confirmed, and the lines recommended, as shown on the maps accompanying their reports, established, by Ch. 763 L. 1857; C. p. 125, (See *People* v. *Vanderbilt*, 26 N. Y. 287), which directed the Commissioners to file the maps "together with a minute written description, by courses and distances, of the aforesaid lines in front of the cities of New York and Brooklyn," in the office of the Secretary of State, and a copy of the description in the office of the Street Commissioner of New York City. The act also provided that "piers shall not exceed seventy feet in width respectively, with intervening water spaces of at least one hundred feet."—See *People* v. *N. Y. and S. I. Ferry Co.*, 68 N. Y. 71. (See G. p. 228-236).

The Commissioners accordingly filed at Albany an **"Atlas of New York Harbor, made under the direction of the Harbor Commissioners,"** in which the following sheets show P. and B. in Kings County extending from the Penny Bridge (Meeker Ave.) on Newtown Creek, to the westerly end of Coney Island:—

Volume I.

15. From Atlantic Dock to Coney Island.

Volume II.

15. Newtown Creek.
14. From Eagle St., Green Point to West Eighth St., Hunter's Point.
16. Dupont St. to Bushwick Creek.
17. From Grand St. to North Thirteenth St.
18. From Wallabout to South First St.
19. Cob Dock.
20. From Marston and Powers coal yard to the Navy Yard.
21. From Ford's pier to Marston and Powers coal yard.
22. From Ford's pier to Hamilton Ave. ferry.
23. From Atlantic Dock to Gowanus creek.
24. Gowanus bay basins. See Map (KK52).

*In connection with these the following should be consulted also.—Report of Committee of Commerce and Navigation in relation to establishing water lines for part of the Harbor of New York.—Sen. Doc. No. 85, 1856, and Report of Professor A. D. Bache, relative to the New York Harbor Coast Survey.—Sen. Doc. No. 16, 1858. Senate Documents Nos. 3 of 1856, and 40 of 1857 were reprinted in — Reports of the New York Harbor Commission of 1856 and 1857. Republished by order of the Chamber of Commerce of the State of New York, C. S. Westcott & Co., Printers, 9 John Street, 1864.—316 p. with maps and charts.

Copies of these sheets (not including, however, that in volume I, and with some of the others numbered differently) are in atlases on file in the Engineering Bureau of the Comptroller's Office, and the Engineering Department of the Bureau of Street Openings, Manhattan, New York City. Most of the two lines are shown in A, and partly on Maps (Y71) and (I142) Newtown Creek—(1128) Newtown Creek to Ferris St.—(Y69) Newtown Creek to the Wallabout—(S) Bushwick Inlet—(Y70) Bushwick Inlet to Grand St.—(N127) The Wallabout—(Y44) The Wallabout to Fort Hamilton—(I131) (KK52) and (KK17) Atlantic Docks to Bay Ridge Ave.—and (KK49) Gravesend Bay, although not always definitely marked as such.

The written description (which is also on file in the Manhattan Bureau of Street Openings), so far as it applies to the Brooklyn shore is given in full in C. pp. 125 to 137. Between Hudson Ave. and (Partition) Coffey St. the Commissioners did not describe any B., but left the line as defined by Ch. 484 L. 1836, Ch. 268 L. 1841, and Ch. 156 L. 1848 unchanged. In their reports they recommended the establishment of B. for this section as follows: *"From Fulton Ferry to Harrison street.* That the line of bulkhead as now established shall remain unchanged." (Sen. Doc. No. 3, 1856, p. 44). *"Brooklyn, extending from the entrance to Gowanus bay, to Fulton ferry.* —In this section, from Gowanus bay, the line of solid filling and of piers is the same, running along the face of the Atlantic dock for about two thousand feet from the southerly terminus, and thence diverging, [to the west] so that at the north corner of the Atlantic dock, it diverges therefrom sixty-six feet;" * * *. From Harrison St. to Fulton Ferry "The bulkhead line remains the same as the line established by law." (Sen. Doc. No. 40, 1857, p. 60.) In the report of the advisory council of U. S. officers (ibid p. 116) is the following:—"The continuation of the line of solid filling, or of bulkhead, runs from the northeast corner of Atlantic dock to a point which is the intersection of Partition [Coffey] street, with the line of the face of the Atlantic dock continued. The topographical map shows that the solid filling already comes up to this line." Their maps also seem to show that in front of the Atlantic dock and southerly to Dikeman St. the B. coincides with the outer line of the docks of the Atlantic Dock Company. No definite and exact recommendation is made for a B. between Hudson Ave. and Fulton Ferry.

In this written description no details are given of the lines south of a point between 63d and 64th Sts., which are referred to only in the following terms:—

"From thence to the west end of Coney Island the Bulkhead line is as laid down and marked 'Bulkhead line' on Sheet No. 15 in Vol. I of the Atlas before mentioned and at the distance from the present shore exhibited on said sheet."

"And from said point which is perpendicular to the Ist Ave. extended to the northerly commencement of Gravesend Bay the Pier line is as laid down on said sheet No. 15 in Vol. I of the Atlas before mentioned and at the distance from the present shore exhibited on said sheet, and from thence to the westerly end of Coney Island a sea-wall is laid down on said sheet as the exterior line."

These lines—which in some places materially curtailed the lines previously established, especially the Permanent Water Lines of Greenpoint and Williamsburgh, and the P. of 1853 between Hudson Ave. and Fulton Ferry—have been considerably modified by subsequent state and federal action. The following fragments of them remain as the legal lines today:

Bulkhead Lines.

1. Meeker Ave. to Whale Creek Canal.
2. From about 200 ft. east of Ann St. to Bushwick Inlet.
3. North Tenth St. to South Eleventh St.
4. Navy Yard nearly to Hudson Ave.
5. Court St. to Hamilton Ave. at Gowanus Canal.
6. Hamilton Ave. at Gowanus Canal to Twenty-fourth St.
7. Forty-ninth St. to Fort Hamilton (except as modified by the Dock Department).

Pierhead Lines.

1. From a point between Oak and Calyer Sts. to Bushwick Inlet.
2. North First St. to South Ninth St.
3. Navy Yard to Brooklyn Bridge.
4. Eighty-ninth St. to Fort Hamilton.

By Ch. 522 L. 1860, Ch. 378 L. 1875 and Ch. 410 L. 1882, Sec. 732 encroachments beyond the H. C.'s lines of 1857 or their alterations are specifically prohibited, unless they were constructed before the establishment of the lines. (See G. p. 16).

By Ch. 516 L. 1860 the State Engineer and Surveyor was directed to make surveys of all filled-in land on the Hudson

and East Rivers, outside of and adjoining the lines of the various grants to the City of New York.

Reports and maps were made accordingly, which will be found in Senate Document No. 10, 1862; see also G. pp. 54, 56, 231-234. Two parcels were discovered in Brooklyn as follows:—

"*Parcel M* consists of three separate pieces, of which two (separated by the water entrance to the Atlantic Basin) lie in front of and adjoining, and now form a part of, the Atlantic Dock; the other being a bulkhead extending southwesterly from said dock, and lie in front and outside of the exterior limits or boundary fixed by the act of May 26, 1841 [Ch. 268]. These pieces have severally an extreme width of 28¼, 18 and 20 feet, and an extreme length of 1,342 ft. 10 in., 2,141 ft. 8 in., and 260 ft., and together containing an area of 57,477 sq. ft." This encroaching bulkhead is coincident with the line of 1841 at the north side of Dikeman St. "It may not be improper here to remark that although the H. C.'s B. as established by the act of 1857 coincides with the present dock its entire length north of Dikeman St., [see supra] as the act establishing this latter line did not convey the fee, the area filled in and lying outside of the line of 1841 is still deemed to be the property of the state."

"*Parcel N* adjoins the easterly side of the Wallabout bay opposite the easterly end of Cob dock, and lies in front of the exterior lines drawn 100 ft. from low water mark, as authorized by the act of Apr. 4, 1849 [Ch. 209]. It has a triangular form, and is bounded on its two inner sides by curved lines, and in front or along the bay by the irregular line of the face of the bulkhead. Its extreme length, measured in a direct line between its angular points is 480 ft., and its greatest width is 185 ft., and it contains an area of 28,905 sq. ft." This parcel is situated along the bulkhead in about the middle of the block between Division Ave. and Cross St. A portion of it was granted by the Commissioners of the Land Office to Caleb H. Shipman in 1865—See Ch. 281 L. 1864 and Liber 673 cp. 228.

It may reasonably be presumed that these parcels, being within the legally established B., are not to be considered as summarily removable purprestures, but that the fee of the soil on which they stand has become vested in the occupants by adverse possession (Code Proc. Sec. 75; Code Civ. Proc.

Sec. 362; *Timpson* v. *Mayor,* 5 App. Div. 424; *People* v. *Mould,* 37 App. Div. 35; G. p. 7) especially in view of the recent cases which tend to question the doctrine of *jus privatum* (*Town of Brookhaven* v. *Smith,* 188 N. Y. 74; *Barnes* v. *Midland R. T. Co.,* 193 N. Y. 378; *Bardes* v. *Herman,* 62 Misc. 428; D. p. 75; F. R. Coudert, Riparian Rights, Columbia Law Review, Mch. 1909, IX, 3 p. 217).

The following **Alterations and Amendments of the Harbor Commissioners' Lines** were subsequently made by State action.

Newtown Creek.—The Harbor Commissioners' line of 1857 extended easterly in Newtown Creek only as far as Meeker Ave.; from that point to Metropolitan Ave., along the main creek and also in the west branch a B. was laid out under the direction of a commission authorized by Ch. 523 L. 1869. This commission made two maps, dated December, 1869, of which the originals were filed in the office of the Secretary of State on May 18, 1870, and copies in the Kings County Register's office on Sept. 27, 1870; Map I and Ia. (Q). The lines shown on these maps were established by Ch. 428 L. 1870 as "the bulkhead lines of solid filling in said creek, beyond which no erection or permanent obstruction of any kind shall be permitted or made," and remain unchanged, except for slight modifications at Porter and Metropolitan Aves. —see Map (Y71), and between Meeker Ave. and Thomas St. —see Maps (I142) and (H111).

Ch. 413 L. 1871 authorized the appointment of a commission to deepen Newtown Creek from Maspeth to Metropolitan Aves..

West Branch.—By Ch. 400 L. 1873-N, the canal in the west branch was extended southerly to Randolph St. By Ch. 98 L. 1881 the lines of that part south of Maujer St. were shifted 91 ft. to the west. The canal now occupies practically the lines established by these acts, and several lateral basins have been constructed leading from it east and west.

Bushwick Inlet.—This estuary was situated on the boundary line between Williamsburgh and the Greenpoint section of Bushwick; as it formed a rather deep reëntrant angle of the shore, the Permanent Water Lines of Greenpoint and Williamsburgh, having been established without any regard to their mutual relations, materially conflicted at their contiguous extremities, which resulted in considerable overlapping

of the grants of land under water adjacent to the opposite sides of Bushwick creek. See Maps (O31) and (U23). This gave rise to some litigation; see *People* v. *Schermerhorn,* 19 Barb. 540; *Hunt* v. *Cunningham,* Judgt. ent. June, 1860; confirmed by Gen. Term May 22, 1863; and by Court of Appeals in Oct. 1868—Roll in County Clerk's Office; (see abstract No. 299,968.)

The H. C.'s lines rectified these discrepancies and established a waterway of from 150 to 110 ft. in width up to the bridge at Kent Ave. On the north side this line, which easterly of a point just east of Quay St. is both a P. and B., remains unchanged to the present day. On the south side and extending as far south as North Tenth St., the lines were extended westerly about 200 ft. so as to make a waterway about 110 ft. wide out to the intersection of the south side of North Thirteenth St., at which point the P. and B. separated. See Maps (S) and (Y70)—Ch. 606 L. 1865-M; Ch. 334 L. 1873. (See *Matter of City of Brooklyn,* 73 N. Y. 179.)

Grand St.—*The Grand St., Prospect Park and Flatbush Railroad Co.* authorized to build piers and docks on land under water out to the H. C.'s lines.—Ch. 743 L. 1871-N.

Brooklyn—First Ward.—*Between Fulton and Montague Sts.*—Certain owners of piers authorized to repair and rebuild them out to 350 ft. from the B. *Martin;* Ch. 945 L. 1871. *Harbeck;* Ch. 232 L. 1872.

Between Joralemon and State Sts.—Burger, Hurlburt and Livingston authorized to repair and rebuild a pier on their property.—Ch. 664 L. 1872. Same, as constructed, legalized.—Ch. 641 L. 1873.

Red Hook and Gowanus Bay.—While the H. C. were engaged in the fulfillment of their duties, Ch. 203 L. 1856-N; C. p. 123 was enacted authorizing Daniel Richards and others to construct bulkheads, piers and basins southwest of the westerly point of Red Hook. This was the project known as the *Pacific Docks* shown on the Daniel Richards Map No. 567 (V3); see also S. III, p. 578. The act also provided that, if, in the judgment of the H. C., the lines thereby established would be prejudicial to navigation, they should modify them. They did consider these lines inadvisable and accordingly modified them by resolutions establishing a B. from (Partition) Coffey St. to Hamilton Ave. at Gowanus Canal; C. p. 124; a copy of these resolutions was filed in the Kings County Clerk's Office on Jan. 7, 1857, together with

a map—No. 302 (II31). (See Sen. Doc. No. 40, 1857, pp. 129-131). This line thus established was incorporated in the final completed description of the B. adopted by the H. C. in language slightly modified in unessential particulars.

In *Gowanus Bay* the Commissioners established two triangular shaped *Basins;* No. I on the Red Hook side, and No. II on the Gowanus side, as shown on sheet No. 24 of Vol. II of their atlas—Map (KK52). These basins were enclosed by breakwaters, of which the outer sides constituted *Sea Walls,* and were so placed as to leave between them a channel about 300 ft. wide leading up to the Gowanus Canal at Hamilton Ave., and debouching on New York bay near the present angle in the outer sea-wall of the Erie Basin about 600 or 700 ft. west of Otsego St. extended. These basins were a development of the ideas outlined in the earlier acts of 1847 and 1851; the easterly one, on the Gowanus side, No. II, has been totally abandoned and the westerly or Red Hook basin, No. I, has been greatly modified.

The outer sea-wall from Ferris St. extended to Otsego St. extended was altered by Ch. 481 L. 1862; C. p. 139 to the position which it now occupies. The **Erie Basin** was established by Ch. 480 L. 1862-N; C. p. 138; (Sec. 3—"This act shall take effect immediately," was repealed by Ch. 593 L. 1886: erroneously or inadvertently, it would seem), it is bounded on the west by a breakwater pier extending southwesterly from and east of Van Brunt St.; on the southwest and south by a breakwater pier built along the outer sea-wall; and on the east by a breakwater pier 250 ft. wide, across the original Basin No. I. easterly from the west side of Otsego St. extended.—See S. III, p. 578-581. This easterly side has been subsequently altered: By Ch. 165 L. 1864; C. p. 141 *The Erie Basin Dock Company* was incorporated and authorized to build this basin and docks, warehouses and other buildings adjoining it.

West of the Erie Basin:—

Southeast of Conover St. extended.—The New York Warehousing Co. authorized to build a pier 200 ft. wide out to the sea-wall, and a breakwater pier southerly along the sea-wall.—Ch. 188 L. 1863, "by two-thirds vote"—N; C. p. 140.

Northwest of Conover St. extended.—Francis B. Cutting authorized to build a pier out to the sea-wall, and a breakwater pier along the sea-wall.—Ch. 156 L. 1865, "by two-thirds vote"—N; C. p. 141.

Out of the easterly portion of the original Basin No. I the

Brooklyn Basin was authorized to be constructed by Ch. 856 L. 1866-N; C. p. 141; amended to correct an error in Section 5 by Ch. 418 L. 1867 "by two-thirds vote." It was bounded on the north by the H. C.'s B. (north of which the owners were authorized to fill in); on the west by a pier 300 ft. wide contiguous to the easterly boundary pier of the Erie Basin, and on the south by a breakwater pier along the outer sea-wall, with an opening at the most appropriate place.—See S. III, p. 578-582. This basin was never constructed and was entirely abrogated by subsequent legislation.

Bay Ridge.—Breakwater pier authorized at the foot of Bennett's Lane.—Ch. 381 L. 1867, "by two-thirds vote"—N.

Board of United States Engineers.—By a concurrent resolution which passed the Senate Feb. 17, 1872, and the Assembly Apr. 6, 1872, it was "Resolved, That the Governor be requested to apply to the President of the United States to appoint three officers in the service of the United States familiar with harbors, to examine into and revise the exterior pier and bulkhead lines of the harbor of New York, on the Brooklyn side, and report such revised line to the Legislature." L. 1872 Vol. 2, p. 2192.

The President accordingly appointed Brig.-Gen. A. A. Humphreys, Chief of Engineers, Hon. Benjamin Pierce, Superintendent of the Coast Survey, and Lieut.-Col. John Newton, Corps of Engineers, and they met and organized May 17, 1872. They made two reports: The first to Gov. John A. Dix, dated Apr. 5, and Apr. 7, 1873 (Sen. Doc. No. 77, 1873)—See Appendix A.; the second to Gov. Samuel J. Tilden, dated May 5, 1875, which was accompanied by maps showing the lines from Willets Point to Coney Island, and exhibiting several recommended changes.—See Appendix B. and Map (KK17).

Pursuant to the recommendations of this Board of Engineers the following new lines were established:

Newtown Creek.— *From Whale Creek Canal to Eagle St.*—P. and B. identical from the canal to a point about 350 ft. west of Manhattan Ave., and a P. only from there on. Somewhat different from the H. C.'s line, being for the most part south of it. Remaining as the present line to-day, except as changed by the following mentioned act. Shown on Maps (Y69) and (II28).—Ch. 224 L. 1878, "by two-thirds vote."—M.

Greenpoint.— *From Box to Calyer Sts.*—P. The present line to-day. Shown on Maps (Y69) and (II28).—Ch. 628 L. 1886.

Brooklyn Bridge to Hamilton Ave.—P. Shown on Map (Y44).—Ch. 702 L. 1873. Section 3 is as follows:—"Whereas, the said board of officers have declared in their said report that such board is in possession of the requisite data for determining the pier line in front of the Atlantic dock at Red Hook, the lines of Gowanus bay and thence to Owl's Head, but have deemed it advisable to postpone the recommendation of that portion of the shore to a future report; it is further enacted, upon the presentation of the report of the said board of officers to the Governor, recommending a pier line in front of the Atlantic dock and at Red Hook, and of bulkhead and pier lines in Gowanus Bay and thence to the prolongation of Bay Ridge Avenue at Owl's Head, it shall be lawful for the owners of real estate fronting on the water between the said Hamilton ferry in the city of Brooklyn and Bay Ridge avenue in the town of New Utrecht, to construct and maintain bulkheads or wharves and piers of the width and at the intervals prescribed by the said act of April 17, 1857 [Ch. 763], and to fill in the same on the lands under water in front of their lands to the exterior bulkhead and pier lines, so to be recommended, subject nevertheless to the action of the Legislature at its next session."

Hamilton Ave. to (Partition) Coffey St., and Seventeenth St. to Bay Ridge Ave.—P. throughout; B. from Twenty-fourth St. to Forty-ninth St. The present lines to-day except between Hamilton Ave. and Coffey St., and where modified by the Department of Docks as to the B. Shown on Maps (KK17) and (Y44).—Ch. 491 L. 1884, "by two-thirds vote."—M. taken in connection with Ch. 702 L. 1873, (see supra) and Ch. 65 L. 1876, "by two-thirds vote," which latter act grants the State's title to lands under water between Twenty-fifth and Twenty-eighth Sts. out to the B. This act of 1884 provides that the copies of the report of the special board of U. S. Engineers of 1875 and the accompanying map (KK17) filed in the office of the Secretary of State Mch. 4th, 1884 (see Appendix B.) "shall be held in all courts and before all tribunals to be sufficient evidence of the contents and effect of the original map and report made by said commissioners, and shall be of the same force and effect as said original map and report, and all grants of land under water within or to the exterior boundary line appearing upon said map and report made by the State are hereby made to

extend by the same course and direction to such exterior boundary line, and are hereby ratified and confirmed as thus extending to the grantees thereof, and their assigns in fee simple." (*White* v. *Nassau Trust Co.*, 168 N. Y. 149.)

Red Hook.—*From the entrance to the Erie Basin to Court St.*—Entirely abolishes the Brooklyn Basin and establishes in lieu thereof two basins or slips 200 ft. wide extending northerly from the exterior sea-wall to Bay St., one parallel with and 223 ft. west of Clinton St., and the other approximately on the line of Hicks St. extended; also redefines the lines of the exterior breakwater pier of the Erie Basin, alters the entrance thereof by establishing a wing on the south side, and extends the Basin easterly to within 37 ft. of the old line of Columbia St. (as it existed before the change made by Ch. 327 L. 1876.) with a basin or slip 200 ft. wide running northerly to Halleck St. Refers for further elucidation to "Map showing plan for the improvement of the water front" etc., owned by Beard, Robinson and others, dated Mch. 1, 1875; made by L. N. Vibbard and filed in the office of the Secretary of State June 7th, 1875; see Maps Nos. 1120 and 1140, (X15) and (Z11), which, however, differ from the map filed at Albany as noted below. Remains as the present line today with only slight modification between Clinton and Court Sts.. Shown on Map (Y44).—Ch. 398 L. 1875. This act, by its title, is an amendment of Ch. 480 L. 1862 and Ch. 856 L. 1866; the relation of these statutes, and also of Ch. 702 L. 1873, Sec. 3, and Ch. 491 L. 1884 to the lines established by this act of 1875 should be carefully considered.

It is to be observed with regard to the Hicks St. and Columbia St. slips that they extend northerly into the upland beyond the high water line, and consequently the effect of the establishment of the lines of these slips above the water line may be considered as somewhat problematical, particularly as the slips have not been wholly actually constructed on the ground; and furthermore the copy of the Vibbard map filed in the Kings County Register's office, No. 1140 (Z11) shows the Hicks St. slip as extending northerly only to Halleck St.

Ch. 327 L. 1876 amends Ch. 398 L. 1875 with reference to the alteration of Columbia and Henry Sts.

The Board of Engineers also recommend a line in Gravesend Bay, which was never acted on by the State authorities, but which was substantially the same as the line approved by the Secretary of War on Mch. 9, 1892.—See Map (KK49).

Town Survey Commissioners' Map.—By Ch. 670 L. 1869 a commission was appointed to establish a street system for that part of Kings County outside of the then existing City of Brooklyn, and to make and file maps thereof. Additional powers were given them by Ch. 331 L. 1872 "to determine and designate" the B. and P. "which are to form the termination of the streets and avenues adopted and laid out by them along the water front of the district under their jurisdiction, on Gravesend and Jamaica Bays;" and "to lay out and map interior basins and B. on the swamps and low lands of the said district; and such P. B., and basin lines shall thereupon become a part of the general plan of said district."

The maps prepared by the commission and filed in the Kings County Register's office on June 13 and 17 and Nov. 13, 1874 show the H. C.'s B. and P. from Sixtieth St. to Fort Hamilton, new B. and P. established by them in Gravesend Bay including the north shore of Coney Island (see Map (KK49)), and a B. along the north and south shores of Sheepshead Bay, and in Jamaica Bay as far east as a point about 150 ft. east of East Ninety-eighth St.. These lines are straight, and, for the most part, parallel with the contiguous streets, and, very roughly speaking, place most of the meadows north and west of Barren Island, as well as the island itself, outside of the B.. Gravesend and Sheepshead Bays are connected by the Gravesend Ship Canal, out of which lead the Harway, Gravesend, Stillwell and Stryker Basins. Besides these there are also the following Basins.—Dyker Basin between Twelfth and Fifteenth Avenues south of Eighty-sixth St.; Gerritsen Basin, at the Gerritsen Mill Pond; one at the Paerdegat; and at Fresh Creek and Spring Creek, these last two not being shown as connecting with the main body of water in Jamaica Bay. These lines and basins are shown in A. plates 10 to 15, and in the various published atlases.

Along the Canarsie shore from East Eighty-second St. to East Ninety-second St. an exterior line of water grants has been established 250 ft. south of the T. S. C.'s B. by a resolution of the Commissioners of the Land Office adopted June 29, 1896, as follows:—"the said grants should extend only to a line drawn westerly from the southwesterly corner of the lands under water granted to the Brooklyn and Rockaway Beach Railroad Co., said line running parallel with the street line, or so-called bulkhead line, already established."—Proc.

Com. Land Of. 1896, p. 150. East of East Ninety-eighth St. a similar line was practically established by the Commissioners of the Land Office in connection with several grants dated Apr. 18, 1896; this line is an extension of the B. in a straight line as far as the east side of East One hundred and third St. extended, where it deflects 20 degrees to the north and continues on to Fresh Creek at East One hundred and ninth St. These lines might be deemed quasi P.

By Ch. 351 L. 1893 the Commissioner of City Works of the City of Brooklyn was directed to have a survey and map made of the meadow lands in the Twenty-sixth Ward, laying out a street system and establishing a B. Accordingly an elaborate map was prepared by Noyes F. Palmer, dated Sept. 1, 1897, extending the street system well out into Jamaica Bay and laying out several "channels" with adjoining bulkheads. This map is said, however, to have never been officially adopted by any competent municipal authority, and it is not considered as an integral part of the city map by the city engineering staff.

IV. FEDERAL ACTION.

While the title to the fee simple—the *jus privatum*—of the lands under water is vested in the State (*People* v. *Tibbetts*, 19 N. Y. 523; *Roberts* v. *Baumgarten*, 110 N. Y. 380; E. p. 933) or its grantees, the latter also acquiring with their grants, easements over the navigable waters fronting them, for access to the wharves which they may build (*Langdon* v. *Mayor*, 93 N. Y. 129; *Williams* v. *Mayor*, 105 N. Y. 419), and the riparian owner, even if not the owner of the soil under water, (in the absence of restrictive regulations,) has the same right of access and may build a pier out into the water (*Yates* v. *Milwaukee*, 10 Wall. 497; *Town of Brookhaven* v. *Smith*, 188 N. Y. 74 and cases cited; *Barnes* v. *Midland R. R. Terminal Co.*, 193 N. Y. 379; D. pp. 300, 341; E. p. 934; F. R. Coudert, Riparian Rights, Columbia Law Review, Mch. 1909, IX, 3 p. 217), the **power to regulate the use of tidal waters** as common highways for the purposes of commerce and navigation—the *jus publicum*—**remained** inalienable **in the State.** (*Bedlow v. N. Y. F. D. Dock Co.*, 112 N. Y. 263), **and** has now become vested in **the National**

Government by the Constitution of the United States, Art. I, Sec. 8, Par. 3 of which provides that "The Congress shall have Power * * * To regulate Commerce with foreign Nations and among the several States." This power is held to authorize the prevention of all acts which impede or obstruct the freedom of navigation, such as the erection of docks and the filling in of bulkheads (*People v. Vanderbilt*, 26 N. Y. 287; G. p. 12 to 17); it also authorizes the curtailment of the riparian owner's access to the navigable waters, and the removal or destruction of any private improvements that interfere with navigation, or with the construction of public works undertaken for its betterment (*Scranton* v. *Wheeler* 179 U. S. 161; *Lewis Blue Point Oyster C. Co.* v. *Briggs*, 198 N. Y. 287; D. pp. 78, 251, 273; E. pp. 938, 939, 943); and that without compensation (*Sage* v. *Mayor*, 154 N. Y. 61; *Slingerland* v. *International C. Co.*, 169 N. Y. 60; D. p. 273; E. p. 935). This interference, however, cannot be for any purpose unconnected with commerce or navigation (*Matter of City of N. Y.*, 168 N. Y. 134).

It has been held that statutes granting riparian owners the right to extend bulkheads, followed by the filling in of the lands to the B. established thereby, extinguish the *jus publicum* inside of such B. (*Bardes* v. *Herman*, 62 Misc. 428).

See generally D. Chaps. II, IV and V; H. I. p. 222-230, II, p. 116-132; G. p. 12-17; E. pp. 933 to 944; Fowler's Real Property Law, 3rd Edit., pp. 95 to 102; *Fulton L. H. and P. Co.* v. *State*, 65 Misc. 263; and Coudert, Riparian Rights, supra.

No action was taken by the Federal authorities, under this paramount delegated authority, with regard to the harbor of New York until 1888 when sec. 12 of the River and Harbor bill passed Aug. 11, 1888 (25 U. S. Stat. L. p. 425, Ch. 860) provided that "Where it is made manifest to the Secretary of War that the establishment of harbor lines is essential to the preservation and protection of harbors, he may, and is hereby authorized to cause such lines to be established, beyond which no piers or wharves [bulkheads or other works —Act of 1890] shall be extended or deposits made except under such regulations as may be prescribed from time to time by him." This was reënacted by the Act. of Sep. 19, 1890 (26 U. S. Stat. L. p. 455. Ch. 907, sec. 12), which also provided penalties for violations, and by the Act of Mch. 3, 1899 (30 U. S. Stat. L. p. 1151 Ch. 425, sec. 11), which also

makes provision for compensatory excavations where filling in tends to displace part of the natural tide-water flow. See pamphlet entitled "Laws for the protection and preservation of the navigable waters of the United States," War Dept., Office of Chief of Engineers, Form 93, which also sets forth various other federal statutory regulations relating to this and cognate subjects.

New York Harbor Line Board.—Accordingly, under the authority of this act of 1888, the following Special Order No. 49, dated Washington, D. C., Oct. 5, 1888, was issued from the Headquarters of the Corps of Engineers, U. S. Army:—"1, By direction of the Secretary of War the Board of Engineers stationed at New York City is hereby constituted a Board of Engineers to establish the Harbor Lines of New York Harbor and its adjacent waters in accordance with Sec. 12 of Act of Aug. 11, 1888."

This Board now has complete jurisdiction, subject to the approval of the Secretary of War, over all questions relating to the establishment or alteration of P. and B. in the waters contiguous to New York City. These lines may be modified upon petition to the Secretary of War setting forth in detail the nature, extent and purpose of the change desired. The matter is then referred to the Board at New York, which proceeds to investigate the proposed change in all its bearings, granting hearings when it considers that conflicting interests might be affected, or, when, for any other reason, it might be deemed advisable. If the Board recommends the change, it so reports to the Secretary of War, upon whose approval the new lines become legally established.

The following **Lines in Kings County** waters have been **approved by the Secretary of War** on the dates noted, after recommendation by the New York Harbor Line Board, which originally adopted, in most instances, the lines already established by State action.

Feb. 8, 1890.—(rec. Jan. 27, 1890).—P. and B. from *Whale Creek Canal to South Ninth St.* Confirming the H. C.'s lines. —Ch. 763 L. 1857—as altered by Ch. 334 L. 1873, Ch. 224 L. 1878 and Ch. 628 L. 1886. Shown on Maps (Y69, Y70, Y71, 1128, and N127). Subsequent changes—between Bushwick Inlet and Grand St.

Mch. 4, 1890.—(rec. Feb. 18, 1890).—B. from east of *Hudson Ave. to Coffey St.*, confirming lines established by Ch. 484 L. 1836

and Ch. 268 L. 1841. P. and B. (except as noted above) from *Navy Yard to Fort Hamilton,* confirming the H. C.'s lines.—Ch. 763 L. 1857—as altered by Ch. 481 L. 1862, Ch. 702 L. 1873, Ch. 398 L. 1875 and Ch. 491 L. 1884. Shown on Maps (**Y44,** II28, N123, N124, N126, and H100). Subsequent changes—between Brooklyn Bridge and Van Brunt St., between Clinton and Court Sts., and between Twenty-eighth and Sixty-third Sts.

The New York Harbor Line Board make the following note:—"The Harbor lines established by the Secretary of War Mch. 4, 1890 for Gowanus Creek and Erie Basin were intended to be those previously established and legalized by State enactments, and dimensions given upon the map [Y. 44] and the description in the Board's report are identical with that given in the State laws, reference being made in each case to those laws as authority. Although the description given by said laws may be defective, in that some of the distances given thereon do not hold, the interpretation is a task within the province of the surveyor, according to established precedents, and the data given upon said maps and in the description are deemed sufficient for the guidance of the engineering public."

The River and Harbor Act passed June 3, 1896 (29 U. S. Stat. L. p. 205 Ch. 314) contains the following:—"It is hereby further provided that such piers as may be built between Seventeenth St., on the south shore of Gowanus Creek, and Fort Hamilton may be constructed so that so much thereof as shall be between the pier and bulkhead lines may be of a linear width not to exceed 300 ft., and, whether of that width or of less width, may be filled with solid materials when an equal tidal prism or space to receive the inflow of the tides is provided in compensation therefor, behind the authorized bulkhead line and adjacent to said piers."

June 18, 1890.—(rec. May 21, 1890).—B. in *Bushwick Creek.*—south side—, and P. from *Bushwick Creek to Grand St.*. Changing lines approved Feb. 8, 1890. Confirmed by Ch. 299 L. 1891. Shown on Maps (**Y 70,** and II 28).

Dec. 29, 1890 and **Nov. 6, 1891.**— (rec. Dec. 16, 1890)—*Newtown Creek,* including the west branch, from *Metropolitan Ave. to Whale Creek Canal.* Confirming the H. C.'s lines—Ch. 763 L. 1857—and the lines established by Ch. 428 L. 1870 as altered between Porter and Varick Aves., by Ch. 400 L.

1873. Shown on Maps (Y 71, II 28 and II 42). Subsequent changes—between Thomas St. and Meeker Ave.

Mch. 9. 1892.—(rec. Feb. 8, 1892)—P. and B. in *Gravesend Bay,* from *Fort Hamilton Parkway to* and around Coney Island Point to (old) *West Thirty-sixth St.,* on the Atlantic Ocean. B. identical with the T. S. C.'s B. from Seventeenth Ave. to the Gravesend Ship Canal. Shown on Maps (**Y 72,** N 125, KK 49 and L 125). Subsequent changes.—B. between Fourteenth Ave., and (old) West Thirty-fourth St. on the north side of Coney Island.

June 3, 1896.—*Act of Congress;* (29 U. S. Stat. L. p. 205, Ch. 314)—B. on north side of *Gowanus Bay between Clinton and Court Sts.* extended. Changing line approved Mch. 4, 1890. Shown on Map (**N 124**), and A. plate 7.

Oct. 25, 1897. —(rec. Oct. 6, 1897)—B. in *Gravesend Bay between Bay Thirty-eighth and Bay Forty-first Sts.* Changing line approved Mch. 9, 1892. Shown on Map (N125). Subsequently changed by line approved Jan. 29, 1907.

Nov. 17, 1897.—(rec. Nov. 4, 1897)—P. from *Brooklyn Bridge to Hamilton Ave.* Changing line approved Mch. 4, 1890. Confirmed by Ch. 776 L. 1900. Shown on Maps (Y 44, II 28, and N 126.)

Dec. 19, 1901.—(rec. Nov. 30, 1901)—P. and B. from *South Ninth St.* to the west side of the *Cob Dock* in the Navy Yard. Changing lines approved Mch. 4, 1890. Shown on Maps (**N 127** and II 28).

Feb. 15, 1902.—(rec. Apr. 5, 1901 and Jan. 21, 1902)—P. and B. from *Greenpoint Ave.* Newtown Creek *to Ferris St.* Red Hook. Combining and confirming lines approved Feb. 8, 1890, Mch. 4, 1890, June 18, 1890, Dec. 29, 1890, Nov. 17, 1897 and Dec. 19, 1901. Shown on Map **(II28),** which gives complete offset distances; and also described in a printed pamphlet entitled "Detailed Descriptions of the Pierhead and Bulkhead Lines for the Water Fronts of part of the City of New York" issued by the War Department in 1902. Subsequent changes—between Hamilton Ave. and Ferris St.

Feb. 24, 1902.—(rec. Jan. 16, 1902)—P. and B. from *Hamilton Ave., to Coffey St.* Changing lines approved Mch. 4, 1890 and Feb. 15, 1902. Shown on Map **(N 126).**

In their report to the Secretary of War the New York Harbor Line Board state that in considering the lines for this locality recommended Feb. 18, 1890 they "at that time

adhered to the line of 1841 under the assumption that it was coincident with the face of the bulkhead of Atlantic Basin as built, and which was believed to be identical with the P. and B. described in the report of the" H. C. "but which line was not drawn upon their maps. The maps which were at that time available by the Board apparently confirmed the view that the line of 1841 was coincident with the face of the bulkhead as built. It is now shown by the maps of the Department of Docks and Ferries, issued in 1899, that the harbor line of 1841, which was approved by the Secretary of War Mch. 4, 1890, cuts the bulkhead of Atlantic Basin near Hamilton Ave. by a about 12 ft. which is the maximum. The modified harbor lines which the Board now recommends for the locality, clear the existing bulkheads and are extended towards the river from zero at the southerly end of the new line to about 30 ft. at Hamilton Ave."

Oct. 26, 1903.—(rec. Oct. 7, 1903)—B. in *Gravesend Bay* at foot of *Bay Thirty-fifth St.* Changing line approved Mch. 9, 1892. Shown on Map (N 125). Subsequently changed by line approved Jan. 29, 1907.

May 3, 1904.—(rec. Apr. 26, 1904)—B. on north side of *Coney Island between West Twenty-fifth and West Thirty-Fifth Sts.* Changing line approved Mch. 9, 1892. Shown on Maps (N 125 and L 125).

Jan. 29, 1907.—(rec. Jan. 21, 1907)—B. in *Gravesend Bay* from *Battery Place to Gravesend Ship Canal.* Changing lines approved Mch. 9, 1892, Oct. 25, 1897 and Oct. 26, 1903. Shown on Map **(N 125).**

Apr. 4, 1907.—(rec. Feb. 23, 1907)—P. *between Coffey and Conover Sts.* Changing line approved Mch. 4, 1890 and Feb. 15, 1902. Shown on Map **(N 123).**

Mch. 19, 1909.—(rec. Jan. 19, 1909)—P. *between Ferris and Van Brunt Sts.* Changing line approved Mch. 4, 1890. Shown on Map **(H100).**

There are now pending before the New York Harbor Line Board, (Nov. 15, 1910):—

1. Contemplated change in Newtown Creek between Thomas St., and Meeker Ave. See Map (H111).
2. Alteration of the lines in Sheepshead Bay.
3. Establishment of the new lines in Jamaica Bay which were approved by the S. F. C. on May 18, 1910.

As to these last two see infra.

V. RECENT CITY ACTION; JAMAICA BAY.

The powers of the City Government over P. and B., and dock and wharf property in general, are defined in sections 816 to 881 of the Greater New York Charter (Ch. 466 L. 1901) and their various amendments. (See also sections 83 to 86).

Among other things, sections 817 and 818 (as amended, by Ch. 741 L. 1904) and 819 provide as follows—The **Commissioner of Docks** "shall have power, by and with the approval of the commissioners of the sinking fund, to adopt and execute a plan or plans for the water front of The City of New York, as constituted by this act, and to fix and establish the line of solid filling, bulkheads and pierhead lines, the distance between piers, method and character of construction of wharves and piers within the entire territory of The City of New York, as constituted by this act." He "shall not have power to change the exterior line of piers and bulkheads, established by law, except by the adoption of a plan or plans for the improvement of the water front of The City of New York, as herein constituted, by and with the approval of the commissioners of the sinking fund." Such plans "shall be and continue to be the sole plan or plans, according to which any wharf, pier, bulkhead, basin, dock, slip or any wharf structure or super-structure shall be laid out or constructed within the territory or district * * * specified upon said plan or plans, and shall be the sole plan or plans and authority for solid filling in the waters surrounding The City of New York, * * * and for extending piers into said waters and erecting bulkheads around said city * * * and all other provisions of law regulating solid filling and pier and bulkhead lines in said waters, are to be deemed to be repealed whenever said plan or plans is or are inconsistent with such provisions of law."

These sections are founded originally on Ch. 137 L. 1870 and Ch. 574 L. 1871, which established the Department of Docks of the City of New York as it then existed. (See G. pp. 195-205). The amendment of sections 817 and 818 by Ch. 741 L. 1904 made the powers of the Commissioner of Docks over P. and B. more definite and certain throughout the entire city. It is, of course, to be understood that this power over P. and B. can be exercised only within the limits of the lines established by the paramount authority of the Federal Government.

Sections 822 to 824 prescribe the methods by which the City shall acquire water front property. It might be mentioned in passing, that some persons strongly advocate the policy of the City eventually becoming the owner of all such property throughout Greater New York.

Acting under these powers the Commissioner of Docks has adopted the following plans, which are confined mostly to places where the City has, or contemplates acquiring, the title to the property shown on the plan.

Whale Creek Canal.—Adopted Mch. 1, 1906; approved by S. F. C. Mch. 21, 1906.—Widening the canal 30 ft. on the east side from Newtown Creek to Green St.; establishing two piers 60 ft. wide and 150 ft. apart between the canal and North Henry St., and a B. along the west side of North Henry St., which is made 100 ft. wide, all running back to Green St., which is also made 100 ft. wide with a B. along its north side. Shown on Map (1142). See sec. 823g, City Charter; Ch. 381 L. 1908.

Metropolitan Ave. (North Second St.) to North First St.—Adopted Feb. 4, 1909; approved by S. F. C. Mch. 1, 1909.—Laying out lands for ferry purposes; no changes in P. and B.

South Sixth to South Ninth Sts.—Adopted June 10, 1909; approved by S. F. C. June 30, 1909.—Laying out lands for ferry purposes; no changes in P. and B. See sec. 824a City Charter; Ch. 331 L. 1909.

Twenty-eighth to Sixty-first Sts.—Adopted May 31, 1906; approved by S. F. C. June 20, 1906.—B. established as follows: between Twenty-eighth and Thirty-sixth Sts., along the west side of First Ave.; between a point 40 ft. north of the north side of Forty-first St. and Fifty-third St. (*Bush Docks*), parallel with and 500 ft. west of First Ave.; and between Fifty-third and Sixty-first Sts., parallel with and 600 ft. west of First Ave.; curtailing the B. approved by the Secretary of War Mch. 4, 1890. Shown on A. plate 8. See sec. 823a. City Charter; Ch. 624 L. 1903; sec. 823d. City Charter; Ch. 517 L. 1906.

Twenty-eighth to Thirty-sixth Sts.—Adopted June 5, 1908; approved by S. F. C. June 30, 1908.—B. established parallel with and 500 ft. west of Second Ave.; curtailing the B. adopted May 31, 1906 and approved June 20, 1906. Shown on A. plate 8. See sec. 823d, City Charter; Ch. 517 L. 1906.

Thirty-sixth to Thirty-ninth Sts.—Adopted Nov. 23, 1905;

approved by S. F. C. Dec. 13, 1905.—Laying out lands for ferry purposes; no changes in P. and B.

Fifty-third to Sixty-third Sts.—Adopted Apr. 8, 1910; approved by S. F. C. —B. established parallel with and 500 ft. west of Second Ave.; curtailing B. adopted May 31, 1906 and approved June 20, 1906.

Jamaica Bay.—Adopted Apr. 25, 1910; approved by S. F. C. May 18, 1910.—See infra.

Ch. 516 L. 1909 gives the Board of Estimate and Apportionment power to lay out sewer drainage canals and to exchange with adjoining owners lands under water in creeks, ditches, ponds and bays which the City no longer needs, for other lands actually required for such canals. And by an Act of Congress "To confer upon the City of New York the power to obstruct certain navigable waters wholly within its limits," approved June 25, 1910, the City is empowered to close "any river or other waterway which does not form a connecting link between other navigable waters" and is wholly within the limits of the city, when authorized to do so by the State, subject, however, to the approval by the Secretary of War, and Chief of Engineers of the location and plans for any such work.

In connection with various changes of the street system on the city map, and other improvements, made by the **Board of Estimate and Apportionment**, some alterations of the B. are in contemplation, most of which have not yet become effective, as they are awaiting the approval of the Dock Commissioner and the S. F. C., or the Federal Government.

These instances are as follows:

Newtown Creek.—A slight change between Thomas St. and Meeker Ave. Tentatively shown on Map (H111). Referred to the Dock Department and transmitted to the Secretary of War May 26, 1910; now before the New York Harbor Line Board for consideration.

Gravesend Ship Canal.—Abolishment of *Harway, Gravesend, Stillwell and Stryker Basins.* Passed by the Board of Estimate and Apportionment Feb. 26, 1909; approved by the Mayor Mch. 4, 1909. Shown on Map (II 37).

Establishment of the *Bensonhurst Storm Water Outlet;* between West Tenth and West Eleventh Sts. from the Ship Canal north to Ave. V. The map showing the land required for this purpose was approved Jan. 29, 1909.

It is the opinion in some quarters that the T. S. C. did not have adequate authority to establish the Gravesend Ship Canal and its accompanying basins, and consequently that their lines could be altered without the action of the Dock Commissioner as they are not legally established B.; and this improvement of the Bensonhurst Storm Water Outlet and the Gravesend Drainage Canal (the old Ship Canal) is seemingly being proceeded with on this theory, it being the intention of the Borough Authorities, acting under the provisions of the City Charter, to construct open canals with sloping sides, and without bulkheads, for drainage and sewer purposes only, and not for navigation.

Sheepshead Bay.—Along the *north shore between East Fourteenth and Bragg Sts.,* modifying the T. S. C.'s B.; also altering the Gravesend Ship Canal between East Twelfth and East Fourteenth Sts. No definite action has been taken on this as yet. Shown on Map (KK 24).

From about *East Fourteenth St.* extended southerly, *along the south shore* easterly about two miles to *Point Breeze Beach.*—As the result of an action brought by the City against the Manhattan Beach Hotel and Land Company involving the title to lands on and adjoining the eastern end of Coney Island part of which the Company acquired by a State grant recorded in Liber 1 of Sec. 22 cp. 48 and Liber 1 of Sec. 25 cp. 42, an agreement was entered into, embodied in a judgment of the Supreme Court entered Oct. 20, 1904, and recorded in the Kings County Register's Office in Liber 7 of Sec. 22 cp. 488, establishing a boundary line between the properties of the respective parties, immediately adjoining which on the north a boulevard 100 ft. wide is laid out, the north side of which, fronting Sheepshead Bay, is to be a B., which greatly modifies the T. S. C.'s B.. Shown on Map No. 1453 (KK28) and also on Map (N 82). This line has been adopted by the Board of Estimate and Apportionment in establishing the street system on the *Manhattan Beach Estates* property by a resolution dated Aug. 5, 1908, but which has not yet been approved by the Mayor, as it needs the action of the Dock Commissioner, the S. F. C., and the New York Harbor Line Board to become effective.—See Maps Nos. 1530 and 1530a to d (KK18).

It is intimated that Dyker Basin also will ultimately be abolished. Along the Bay Ridge shore between Sixty-sixth St. and Fort Hamilton, The Shore Road as constructed en-

croaches at several places on the B. approved by the Secretary of war Mch. 4, 1890. Some attempts have been made to have the B. modified, but as yet without success.

Jamaica Bay.—The project of establishing a great harbor in Jamaica Bay has been taken up vigorously by the Federal, State and City governments acting in co-operation. The contribution of the State is Ch. 568 L. 1909, ("by two-thirds vote") which grants all of the State's title to land under water in Jamaica Bay (outside of Nassau County) to the City of New York, the grant to "become operative upon the U. S. Government making its first appropriation for the creation of the new harbor, or upon the City of New York appropriating and setting aside a sum not less than one million dollars for the same purpose."

The *Jamaica Bay Improvement Commission* was appointed Apr. 26, 1906 by the Board of Estimate and Apportionment to investigate and report on the general project. They were reappointed June 7, 1907 and have made several reports, the most important of which is one submitted Dec. 27, 1909, which is very full and complete and is thoroughly illustrated with a number of valuable maps and views. The Commission has worked in conjunction with the *United States Army Engineers* who have made reports on the subject, dated Aug. 3, 1907, and Jan. 30, 1909, signed by Col. John G. D. Knight, and which are printed, with other related matter, and a map, in House Document No. 1488, 60th Congress, 2nd session, Feb. 27, 1909.

The general scheme, as tentatively determined upon, is the establishment of P. and B. from the most south-easterly corner of Barren Island to points off the east side of Bergen Beach between Aves. V. and X, and thence easterly along the Canarsie, New Lots and Jamaica shore with basins at the Paerdegat, Fresh Creek, Mill or Spring Creek, and at several points in Queens County.

The maps show three lines:—proposed City B.—proposed U. S. B., 250 ft. further out—and proposed U. S. and City P. 750 ft. further out still. Outside of this last line it is proposed to dredge a channel 18 ft. deep and 500 ft. wide, and eventually to make it 30 ft. deep and 1000 ft. wide. The improvement is to be connected with the open ocean by a channel through Rockaway Inlet to be made 18 ft. deep and 500 ft. wide and eventually deepened to 30 ft. and widened to 1,500 ft.

With some modification in Queens County these City B. and P. were adopted by the Dock Commissioner Apr. 25, 1910, and approved by the S. F. C. May 18, 1910 and are now before the New York Harbor Line Board for its action. For detailed description see City Record for May 25, 1910, pp. 5713 and 5714, and Map accompanying "Report on Jamaica Bay Improvement" of the Dock Commissioner, dated Apr. 20, 1910.

Very recently, however, the Dock Commissioner has prepared a map combining this improvement and the Sheepshead Bay suggestions with a method of treatment for the intervening territory west and north of Barren Island which greatly modifies the whole scheme. The lines in Jamaica Bay are to be extended further out into the bay, and a complete set of lines is proposed from the Atlantic Ocean front at Manhattan Beach, into and around Jamaica Bay to the westerly end of Rockaway Point, with basins at Sheepshead Bay; Gerritsen's Basin, which debouches at Dead Horse Inlet; Mill Basin, which extends westerly from Jamaica Bay between Barren Island and Bergen Beach around the south and west sides of Mill Island; the Paerdegat; Fresh Creek; Spring Creek and several points in Queens County. See Map (G G 61).

This improved and comprehensive project has been submitted to the New York Harbor Line Board for their action, and will be taken up for consideration in the immediate future. It may, however, be largely modified before final approval, as the plan outlined above is wholly tentative at present.

VI. THE PRESENT LINES, (NOV. 15, 1910), AND THEIR RELATIONS TO PREVIOUS LINES. — SEE A.

1. **Newtown Creek.**—P. and B. the same throughout.

a. *West Branch—"English Kills."*—From former line of *Randolph St. to Metropolitan Ave.*—Established by Ch. 400 L. 1873 as modified by Ch. 98 L. 1881 south of Maujer St.—From *Metropolitan Ave. to Seneca Ave.*—Approved Dec. 29, 1890, confirming lines established by Ch. 428 L. 1870 as slightly modified near Metropolitan Ave., by Ch. 400 L. 1873—See Maps (Q) and (Y 71).

b. From *Metropolitan Ave. to Meeker Ave.*—Approved

Dec. 29, 1890, confirming lines established by Ch. 428 L. 1870; slight change contemplated between Thomas St. and Meeker Ave.—See Maps (Q, Y 71, II 42 and H 111).

c. From *Meeker Ave. to Whale Creek Canal.*—Approved Dec. 29, 1890, confirming the H. C.'s line. Interior modifications between North Henry St. and Whale Creek Canal by Dock Department approved by S. F. C. Mch. 21, 1906. See Maps (Y 71 and II 42).

d. *Whale Creek Canal.*—Established by Commissioners Map of Bushwick, 1854; modified by Ch. 513 L. 1894 and resolution of Common Council Dec. 2, 1895, and by action of Dock Department mentioned above.

e. From *Whale Creek Canal to Manhattan Ave.*—Approved Feb. 8, 1890, confirming lines established by Ch. 224 L. 1878 which modified the H. C.'s line.—See Maps (Y 69, Y, 71, and II 28).

2. **Greenpoint.**—a. From *Manhattan Ave. to Box St.*—Approved Feb. 8, 1890, confirming lines established by Ch. 224 L. 1878 which modified the H. C.'s lines, but left their B. unchanged west of a point about 352 ft. west of Manhattan Ave.—See Maps (Y 69, Y 71 and II 28).

b. From *Box St. to Calyer St.*—Approved Feb. 8, 1890; confirming H. C.'s B., which greatly restricted the permanent water line of Bushwick established by Ch. 302 L. 1849; and P. established by Ch. 628 L. 1886 which modified the H. C.'s P. and its alteration north of Eagle St. by Ch. 224 L. 1878.—See Maps (Y 69, Y 71 and II 28).

3. **Bushwick Inlet.**—a. *North side;* from *Calyer St. to Franklin St.*—Approved Feb. 8, 1890, confirming H. C.'s lines.—See Maps (Y 69, Y 70 and II 28).

b. *South side;* from *Kent Ave. to North Twelfth St.*—Approved June 18, 1890, modifying lines established by Ch. 606 L. 1865 and Ch. 334 L. 1873 (of which the B.—apd. Feb. 8, 1890—remains unchanged from North Twelfth St. to a point about 188 ft. north thereof) which altered the H. C.'s lines (which, as altered, had been approved Feb. 8, 1890), which, had greatly restricted the permanent water line of Williamsburgh established by Ch. 128 L. 1835 and Ch. 371 L. 1837. Confirmed by Ch. 299 L. 1891.—See Maps (S, Y 69, Y 70 and II 28).

4. **Williamsburgh.**—*B.* from *North Twelfth to South Ninth Sts.*—Approved Feb. 8, 1890, confirming H. C.'s B. (including

the part north of North Tenth St., as altered by Ch. 334 L. 1873), which considerably restricted the permanent water line of Williamsburgh as established by Ch. 128 L. 1835.—See Maps (Y69, Y70 and I128).

P. from North Twelfth St. to a point 100 ft. south of *North First St.*—Approved June 18, 1890, modifying H. C.'s P. (as altered north of North Tenth St. by Ch. 334 L. 1873), which had been approved Feb. 8, 1890. Confirmed by Ch. 299. L. 1891.—See Maps (Y69, Y70 and I128). From *above mentioned point to South Ninth St.*—Approved Feb. 8, 1890, confirming H. C.'s P.—See Maps (Y 69, Y 70 and II 28).

5. **Wallabout.**—From *South Ninth St. to West side of Clinton Ave.*—Approved Dec. 19, 1901. B. from South Ninth to Cross Sts. only slightly different from H. C.'s B.—See Maps (N127 and I128). *Wallabout Basin.*—Established under various statutes, see supra. P. established by Department of City Works, Aug. 7, 1897. *Kent Ave. Basin.*—Established under Ch. 548 L. 1868.

6. **Navy Yard.**—Approved Dec. 19, 1901, establishing a B. and P. line considerably outside of the U. S. Jurisdiction line established by Ch. 355 L. 1853 and H. C.'s P. which had been approved Mch. 4, 1890.—See Maps (Y 44, N 127 and II 28).

7. **Brooklyn.**—a. From *Navy Yard to Brooklyn Bridge.*—Approved Mch. 4, 1890, confirming B. from Navy Yard to a point about 72 ft. east of Hudson Ave. established by H. C., and from this point to the Bridge established in accordance with Ch. 484 L. 1836 and Ch. 156 L. 1848; and P. established by H. C. which considerably restricted P. established by Ch. 270 L. 1853.—See Maps (Y 44, N 127, and II 28).

b. From *Brooklyn Bridge to Hamilton Ferry.*—B. approved Mch. 4, 1890, confirming lines established by Ch. 484 L. 1836 and Ch. 156 L. 1848 north of Harrison St., and Ch. 268 L. 1841 south of Harrison St., which there altered the line of 1836. P. approved Nov. 17, 1897, extending P. established by Ch. 702 L. 1873, (approved Mch. 4, 1890), which itself had extended the H. C.'s P. which had altered the P. established by Ch. 271 L. 1847 and Ch. 270 L. 1853; confirmed by Ch. 776 L. 1900.—See Maps (Y 44 and II 28).

c. From *Hamilton Ferry to Coffey St.*—Approved Feb. 24, 1902, modifying B. established by Ch. 268 L. 1841 (approved Mch. 4, 1890), which altered the line of Ch. 484 L. 1836, and P. established by Ch. 491 L. 1884 (approved Mch. 4, 1890), which

altered the H. C.'s P.—See Maps (KK 17, Y 44, II 28 and N 126).

d. From *Coffey St. to Hicks St. Basin.*—B. from Coffey St. to Otsego St., approved Mch. 4, 1890 confirming H. C.'s B., which altered lines established by Ch. 202 L. 1847, Ch. 83 L. 1851, and line described in Ch. 203 L. 1856. P. from Coffey St. to a point between Ferris and Conover Sts., extended, approved Apr. 4, 1907, modifying H. C.'s P., and sea wall line established by Ch. 481 L. 1862, which had been approved Mch. 4, 1890.—See Map (N123). P. from above mentioned point to Van Brunt St., extended, approved Mch. 19, 1909, modifying sea wall line established by Ch. 481 L. 1862 (approved Mch. 4, 1890).—See Map (H 100). Breakwater pier east of Van Brunt St. established by Ch. 480 L. 1862. Exterior and interior sea wall lines of Erie Basin approved Mch. 4, 1890, confirming lines established by H. C., and Ch. 398 L. 1875, which modified in some particulars (especially along the east side of the Erie Basin, and at its entrance), the lines established by Chs. 480 and 481 L. 1862, which latter had changed the exterior sea wall line on the westerly side of the Erie Basin.—See Maps (II 31, KK 17, Y 44 and II 28).

e. From *Hicks St. Basin to Gowanus Canal at Hamilton Ave.*—Approved Mch. 4, 1890, confirming B. and P. established by Ch. 398 L. 1875, which, while retaining the exterior sea wall line established by H. C., and their B. northeast of Court St., abolished the Brooklyn Basin, established by Ch. 856 L. 1866, and provided in lieu thereof the Hicks St. and Henry St. slips or basins; this act of 1875 also entirely altered the H. C.'s B. west of Court St., which had greatly modified the lines established by Ch. 202 L. 1847 and Ch. 184 L. 1851. Slightly modified later between Court and Clinton Sts. by Act of Congress of June 3, 1896: see Map (N124).—See Maps (II31, KK52, KK17 and Y44).

f. *Gowanus Canal.*—Established by Ch. 79 L. 1849. As to the lateral basins see supra.

g. From *Hamilton Ave. at Gowanus Canal to Forty-ninth St.*—Approved Mch. 4, 1890, confirming H. C.'s B. from Hamilton Ave. to Twenty-fourth St., which modified B. established by Ch. 184 L. 1851; and thence to Forty-ninth St., B. established by Ch. 491 L. 1884, which considerably extended the H. C.'s B. which had modified the B. of the act of 1851 between Twenty-fourth and Twenty-seventh Sts.; also con-

firming H. C.'s P. from Hamilton Ave. to Seventeenth St., and thence to Forty-ninth St., P. established by Ch. 491 L. 1884 which considerably altered the H. C.'s P.. B. between Twenty-eighth and Forty-ninth Sts. subsequently set back by action of the Dock Commissioner and S. F. C.; see A plate 8.—See Maps (I131, KK52, KK17 and Y44).

h. From *Forty-ninth St. to Fort Hamilton.*—Approved Mch. 4, 1890, confirming H. C.'s B., and P. established by Ch. 491 L. 1884 between Forty-ninth St. and Bay Ridge Ave., a new P. from Bay Ridge Ave. to Eighty-ninth St. (these both extended the H. C.'s P. somewhat), and the H. C.'s P. from Eighty-ninth St. to Fort Hamilton Parkway. B. between Forty-ninth and Sixty-third Sts. subsequently set back by action of the Dock Commissioner and S. F. C.; see A plate 8.—See Maps (KK17) and (Y44).

8. New Utrecht.—See 7, h and 9.

9. Gravesend Bay.— *B.* from *Fort Hamilton Parkway to Fourteenth Ave.*, approved Mch. 9, 1892, changing the T. S. C.'s B. which had restricted the H. C.'s B.; from *Fourteenth Ave. to Gravesend Ship Canal*, approved Jan. 29, 1907, considerably extending B. approved Mch. 9, 1892, which was originally identical with the T. S. C.'s B. south of Seventeenth Ave. (although different from it north of that point) which had greatly restricted the original H. C.'s B.; this line of Mch. 9, 1892, had been modified at Bay Thirty-fifth St., and between Bay Thirty-eighth and Bay Forty-first Sts. by lines approved Oct. 26, 1903, and Oct. 25, 1897. *P.* approved Mch. 9, 1892, somewhat extending the H. C.'s P. and the T. S. C.'s P.—See Maps (KK49, Y72, and N125).

10. Gravesend Ship Canal.—Laid out on T. S. C. Map 1874. Slight changes contemplated east of East Twelfth St.. Harway, Gravesend, Stillwell and Stryker basins abolished Mch. 4, 1909. Bensonhurst Storm Water Outlet initiated Jan. 29, 1909.—See A plate 11 and Maps (I137 and KK24).

11. Coney Island.—a. *Westerly end.*—From near West Thirty-third (old W. 34th) St. on Gravesend Bay around Norton's Point to near West Thirty-sixth (old W. 36th) St. on Atlantic Ocean, B. and P. approved Mch 9, 1892, somewhat altering lines established by T. S. C. on Gravesend Bay side. From near West Thirty-third (old W. 34th) St. easterly to near West Twenty-fifth (old W. 26th) St. B. approved May 3, 1904, extending line approved Mch. 9, 1892,

which had extended the T. S. C.'s B.—See Maps (KK49, Y72 and L125).

b. *Easterly end.*—B. established on Sheepshead Bay side Oct. 20, 1904, by agreement and judgment in action between the City and the Manhattan Beach Hotel and Land Co., which greatly modified the T. S. C.'s B. Not yet approved by the Secretary of War.—See Liber 7 Sec. 22 cp. 488 and Maps (N82 and KK28).

12. Sheepshead Bay.—a. *Northerly side.*—B. established by T. S. C. in 1874; contemplated changes shown on Map (KK24).

b. *Southerly side.*—See 11. b.

13. Jamaica Bay.—B. established by T. S. C. in 1874 from Sheepshead Bay around to East Ninety-ninth St., following in a general way, but with several departures therefrom, the line of the upland.—See A. plates 14, 15 and 16. From the southeasterly end of Barren Island northerly to Bergen Beach, and thence easterly, superseded by B. and P. approved by S. F. C. May 18, 1910.—See A plates 15, 16 and 17. See contemplated modifications mentioned above.

VII. MISCELLANEOUS.

Several projects for the construction of canals have been contemplated heretofore, which were never carried out to completion, nor, in fact, probably ever actually started in construction on the ground, among which are the following:—

1. Ch. 181 L. 1828.—Incorporating the *Wallabocht Canal Co.* to construct a canal from Tillary St. to the Wallabout Bay along the east side of the Wallabout Meadows, and, where necessary, to acquire lands by condemnation "but no description of land, except salt meadow-land, marsh-land, and land covered with water, shall be taken" and the land thus taken "shall in no part be of greater width than two hundred and fifty feet." An actual appraisal of the necessary lands was made as per Liber 25 cp. 355, but nothing further ever seems to have been done.

2. Ch. 219 L. 1828; Ch. 255 L. 1829; Ch. 202 L. 1848 and Ch. 446 L. 1859.—*Connecting Gravesend and Jamaica Bays*, etc.; see S. II, pp. 218 and 224.

3. Ch. 183 L. 1873.—Authorizing *Thomas Hunt* to con-

struct a canal between Forty-fifth and Forty-sixth Sts. to within 470 ft. of Third Ave. with lateral canals between Forty-fourth and Forty-ninth Sts., to "be commenced within six months and completed within three years of the passage of this act."

Ch. 443 L. 1868 defines the powers of the *Eureka Basin Warehouse and Manufacturing Co.,* which was incorporated in 1867 to construct docks, etc., at Bushwick Inlet. This act was amended by Ch. 637 L. 1881 giving the company power to exercise the right of eminent domain. This latter act was declared unconstitutional in *Matter Appl'n of E. B. W. and M. Co.,* 96 N. Y. 42, and both acts were repealed by Ch. 117 L. 1886.

Ch. 864 L. 1868, amended by Ch. 282 L. 1869 incorporated *The Marsh Land Company* for the purpose of reclaiming and draining "wet or overflowed lands and tide-water marshes on or adjacent to Staten Island and Long Island" for which it "may receive an annual compensation" by assessment on the lands reclaimed, which shall be a lien on said lands, enforceable by sale for non-payment. The company had surveys made and filed a series of maps in the office of the Secretary of State at Albany, and otherwise complied with the requirements of the act necessary to vest it with the State's title to lands under water, which was granted therein. Opposition having developed on the part of interested owners of the lands to be reclaimed, investigations were started which finally resulted in the repeal of the sections of these acts under which the company was operating by Ch. 257 L. 1875, and the acts of 1868 and 1869 were declared unconstitutional in *Coxe* v. *State,* 144 N. Y. 396. Some further questions of financial claims were dealt with in the above mentioned case and Ch. 317 L. 1884 and Ch. 316 L. 1895.

Statutes relating to the regulation of piers, dredging of slips and rates of wharfage—which are numerous, and which have been mostly incorporated in or superseded by the present city charter, and its predecessors, and the New York Consolidation act—are not deemed to come within the scope of this compilation.

APPENDIX A.

Senate Documents—1873.

No. 77.

Report.

New York, April 5th, 1873.

His Excellency John A. Dix, Governor of the State of New York:

Sir.—In accordance with the duties imposed upon the board appointed * * * to examine into and report upon a proper method of revising the exterior pier and bulkhead lines of the harbor of New York, on the Brooklyn side, the board has the honor to present to you a copy of the order under which it has acted, and a report, to the present date, of its progress. * * *

[Order of appointment—first meeting May 17, 1872—reported for duty to the Governor—sent communications to the Secretary of the State and the Chief Engineer of the New York City Dock Department requesting maps—received maps from latter—directed observations to be made of tides and currents—received communication (given in full) from Atlantic Dock Co., requesting permission to extend piers—directed that owners interested be notified that board was ready to receive communications. Convened again Sept. 29, 1872—examined charts of tides, etc., and other maps—were attended by various pilots who gave their views—directed hydrographic survey to be made. Met again Apr. 3, 1873—map of survey examined—owners of water property were invited to be present.]

The board, after mature consideration of the observations made and the information embodied in the maps and charts accompanying this report, after a careful study of the necessities and conveniences of commerce, have the honor to recommend for a portion of the pier line upon the Brooklyn side of New York Harbor:—

1st. The channel-way of that portion of the river between the Wallabout and Fulton Ferry, as now defined by the pier and bulkhead lines now established, cannot be narrowed, or

its area diminished, without injuriously affecting its navigation. The pier lines of this part of the water front of Brooklyn should, therefore, remain as now established.

2d. For the portion of the East river extending from Fulton ferry to the Atlantic docks a pier line is recommended as follows: From a point in the prolongation towards the channel of the south-west face of the bridge abutment, twenty feet distant from the north-west corner of the said abutment, in a gentle curve to the extremity of Martin's upper pier; thence in a straight line to the extremity of Martin's middle pier; thence in a straight line to the extremity of Martin's lower pier; thence in a straight line to a point in the prolongation of the upper line of Ford's pier near the foot of Grace Court prolonged, and fifty feet beyond the outer end of said pier; thence in a straight line to a point in the prolongation of the upper line of Robinson's pier, between the foot of Warren and Congress streets, two hundred feet beyond the outer end of said pier; thence in a straight line to a point on the prolongation of the upper line of the lower pier of Hamilton ferry slip, and fifty feet beyond the outer end of said pier. [Established by Ch. 702 L. 1873.]

Although the board is in possession of the requisite data for determining the pier line in front of Atlantic dock, at Red Hook, the lines of Gowanus Bay, and thence to Owl's Head, yet, owing to the absence of one of its members, it is deemed advisable to postpone the recommendation of that portion of the line to a future report.

But, upon the application of Messrs. Beard, Robinson and others, proprietors of the Erie basin, to modify in certain respects some of the interior lines and spaces thereof, it is recommended that their application be granted; upon map "A," sent herewith, are shown in red the lines of the basin as fixed by law; the lines in green represent the modifications applied for.

[The question of funds discussed.]

Accompanying this report will be found the following maps:

Map marked "A," showing the shore line of the City of Brooklyn, including Gowanus Bay, extending as far as Owl's Head. Also two current charts marked "B" and "C," representing the currents on the ebb and flood, for the portion

of the East river extending from Governor's Island to the Wallabout, as executed under the orders of the board.

Paper marked "D" being an abstract of communications addressed to the board by the owners of water fronts subject to revision.

Respectfully submitted,

A. A. Humphreys,
Brig.-Gen., Chief of Engineers U. S. A.

John Newton,
Lt.-Col. of Engineers, Bvt. Major-Gen'l.

D.

Abstract from letters addressed by owners of water fronts to the special board. * * *

[Following persons ask for various extensions beyond existing lines: Charles Pratt, C. and R. Poillon, Nesmith and Sons, Jewel Brothers, Mr. Martin, C. L. and J. L. Colby, Henry E. Pierrepont, John Prentice, David Dows, William Beard, Woodruff and Robinson, Commercial Warehouse Co., Atlantic Dock Co., Divine Burtis, Henry D. Brookman, James Wilson, William Cutting, Jeremiah P. Robinson, Isaac Rich, Franklin Woodruff, George C. Robinson and Francis D. Moulton.]

United States Engineers Office,
Room 31, Army Building, cor. Houston and Greene Sts.
New York, April 7, 1873.

His Excellency John A. Dix, Governor of the State of New York:

Sir.—In the report of the board for the revision of the harbor lines in the harbor of New York, on the Brooklyn side, dated April 5, 1873, and transmitted on that date to your excellency, and at that portion of the report where the upper point of the new pier line, as recommended by the board, is defined in the following words: "From a point in the prolongation towards the channel of the south-west face of the bridge abutment, twenty-feet distant from the north-west corner of the said abutment, in a gentle curve to the extremity of Martin's upper pier" * * * it was not the intention of the board to interfere with the length of the upper spring-pile fender pier at Fulton ferry, as defined by the pier line of 1857, established by law, nor to indicate an opinion that such length is too great, although the "gentle curve to the

extremity of Martin's upper pier" would, in effect, cut off a part of said spring-pile fender pier.

The initial point would have been defined upon the spring-pile fender pier, but for the reason that such a structure was temporary in its nature, and liable to alteration and removal from time to time, whereas the bridge abutment would be a permanent mark.

It is not thought that the words given above, defining the initial point and the first portion of the new pier line, would have the legal effect of disturbing the fender pier of the ferry company, but to prevent any doubt of the meaning of the board, it was thought best to indicate clearly its intentions.

I have the honor to be your Excellency's obedient servant,

(For the Board) John Newton,
Lieut.-Colonel Engineers, Bvt. Maj.-Gen.

APPENDIX B.

Report of the Board of United States Engineers, referred to in Ch. 491 L. 1884.

I do hereby certify that the annexed Report is a true copy of a report transmitted to the Governor of the State of New York on or about the date thereof by Genl. A. A. Humphreys, Chief of Engineers U. S. Army, C. P. Patterson, Superintendent U. S. Coast Survey, and myself, being commissioners appointed for the purpose of laying out Pier and Bulkhead lines on the easterly shore of the East River, pursuant to a joint resolution of the Senate and Assembly, passed in Senate February 17, 1872, and in Assembly April 6, 1872, and that the annexed map (KK17) is a true copy of general map No. 4, referred to in said report and transmitted with said report to the Governor of the State of New York, which said report and map were so transmitted pursuant to the provisions of Section 3 of Chapter 702 of the Laws of 1873.

New York City,
March 3rd, 1884.

John Newton,
Colonel of Engineers,
Bvt. Maj. Genl.

United States Engineer's Office,
Houston and Green Streets,
New York, May 5, 1875.

His Excellency, Sam'l J. Tilden,
Governor of the State of New York.

Sir:

In accordance with the duties imposed upon them, the Board appointed by the President of the United States, in compliance with the request of your predecessor, the Hon. John A. Dix, to examine into and report upon a proper method of revising the exterior pier and bulkhead line of the Harbor of New York on the Brooklyn side, have the honor to submit their final and complete report.

On April 5, 1873, the Board presented to his excellency, Governor Dix, their recommendations for an exterior pier and bulkhead line from the Wallabout to the lower pier of the Hamilton Avenue Ferry, which line, it is believed was afterwards authorized by the Legislature of the State. [Ch. 702 L. 1873.]

This present report to your excellency includes maps of the water front on the Brooklyn side, from Willets Point to Coney Island.

Note—The maps are referred to in this report according to their headings made in red. The red harbor lines represent the recommendations of this Board. Those in black correspond to the lines of 1856 and 1857, while those in blue define the extent of various land grants, as understood by the Board.

From Willet's Point to Hallett's Point.

Sheet 1. A general map and sectional map, sheet No. 1a, refer to this space.

Until the progress of business in this direction shall have indicated the particular uses to which the several portions of this water area will be devoted, the Board do not deem it advisable to recommend any change in the lines laid down in the Harbor Commissioner's report of 1856 and 1857, except in Pot Cove, Hell Gate, as marked in red lines upon sectional map sheet 1a.

From Halletts Point to the Wallabout.

General map sheet 2 and sectional map, sheet No. 2a, sheet No. 2b, sheet No. 2c and sheet No. 2e, refer to this portion.

The lines of 1856 and 1857 in Halletts Cove are susceptible

of change, but until the development of business shall define the wants of the place, the Board deem it advisable to make no alteration.

The blue lines encroaching upon the bed of Newtown Creek at and near the bridge, at Union Avenue, are represented to bound certain grants made to Crane & Ely, and in so far as they project beyond the lines of 1856 and 1857 are injurious to the creek and should be set back by law.

The Southern shore of the outlet of Newtown Creek is defined by offset distances measured from Union [Manhattan] Avenue, Greenpoint; the location of which avenue was taken from the H. C.'s maps of 1856 and 1857. If any change has been made since, in the position of this avenue, the length of these offsets must likewise be changed. The system adopted is to locate all modifications of the Harbor lines of 1856 and 1857 from those lines, but when a discrepancy exists, as it does in this case, in the lines of 1856 and 1857, exhibited in the official maps, no other resource but to lay down the lines as at present recommended, with respect to some street, or other prominent feature of the city, was practicable. As a further check, the widths at the outlet of the creek, as recommended by this Board, are given on the map.

At the mouth of Bushwick Creek several land grants, the lines of which are laid down in blue, have been made, and modify materially the lines of 1856 and 1857.

Pratt's Wharf has also been built out far beyond the limits of these grants, by what authority is not known, with the result of distorting and nearly obliterating the mouth of Bushwick Creek.

If it is decided to fill up this creek this encroachment is well enough, and the red lines laid down by the Board across the outlet to Bushwick Creek carry out such apparent intention.

But if the creek is to be retained as a navigable canal, after a careful scrutiny of the interests of that section of the city, Pratt's Wharf should be removed and a suitable form of outlet of the creek adopted.

From the Wallabout to Atlantic Docks.

General map, sheet No. 3, and sectional sheets No. 3a, No. 3b, refer to this portion.

The outer P. and B. of this water front, marked in

red wherever the Board has judged it expedient to depart from the lines of 1856 and 1857, having already been approved as far down as Hamilton Ferry by the Legislature, are again transmitted for the purpose of exhibiting in this final report a complete view of the whole front, and to present their recommendation of a small projection of the pier line for the upper portion of Atlantic Dock.

At and near the Bridge Tower the line as recommended in their report of April 5, 1873, is represented in broken red lines, and the Board now judge it proper to make therein a slight modification for the purpose of obtaining a better connection with the line above the Tower. The only object of this change, otherwise immaterial, from their report of April 5, 1873, is to make the line more regular and prevent questions in the future.

From the lower pier of Hamilton Avenue Ferry to Coney Island.

General map, sheet No. 4, and sectional map No. 4a, exhibit this portion.

The Atlantic Dock Company and the proprietors of the piers at Red Hook, having made repeated application for additional pier extension into the channels, the Board, after a careful study of the locality, of the surroundings and currents, of the relations between Buttermilk Channel and the East River, and between the former and Red Hook Channel and Yellow Hook Channels, have come to the conclusion that their requests could not be granted without serious risk to the integrity of these channels and to vested interests based upon their preservation.

The maps show the proposed modification of the interior space of the Erie Basin as recommended by the Board and requested by the proprietors.

An exterior extension of the southern limits of this basin so as to form a proper line for the channel leading up to Gowanus Canal, which extension may be made by including the space within the walls of the basin or by building out piers, as may be deemed advisable, is likewise recommended.

The proposed P. and B. of the south shore of Gowanus Bay, and thence extending to Coney Island, are likewise exhibited.

Along the south shore of Gowanus Bay the B. being represented a considerable distance (about 600 feet) within the

P., the Board wish it to be understood that the B. may, without injurious consequences, be brought out much nearer, if desired, to the line of the heads of the piers to suit the convenience of proprietors.

The new P. and B. recommended in this report may be located by distances from the P. of 1856 and 1857, taken from the maps in every case where the records of 1856 and 1857 show that the lines then established have been referred to certain defined objects on land, but where these lines have not thus been defined, or where, as at Newtown Creek and Gowanus Bay, discrepancies have been detected in the maps defining the lines of 1856 and 1857 the new lines, with the aid of the maps, can be located by surveyors competent to such work.

Resp'y submitted,

John Newton,
Lt. Col. Engineers,
Bvt. Major General.

APPENDIX C.

List of Maps.

[Unless otherwise stated, filing dates and numbers refer to the Kings County Register's Office.]

DD 33.—Map of property belonging to Col. Daniel Richards in the 6th Ward of the City of Brooklyn. Liber 219 cp. 340.

H 55.—[Opening map of the Mill Road.] Map of survey of public highway from Public Landing near Ida Voorhees' to street leading to G. W. Cropsey's Dock, as surveyed Aug., 1857, for the Commissioners of Highways of the Town of Gravesend, by Tunis G. Bergen.

H. 100.—Extension of pierhead line for easterly shore of Upper New York Bay, near foot of Conover St., Red Hook, Borough of Brooklyn, New York City, as recommended by the New York Harbor Line Board, Jan., 1909. Approved March 19, 1909.

H 111.—Map accompanying application of the Commissioner of Docks for a modification of the B. and P. of Newtown Creek between * * * Scott Ave. and Thomas St.—[Dock Department and New York Harbor Line Board.]

II 1.—Map of Valuable Farm [Gerritsen] situated in the 31st Ward, Borough of Brooklyn, City of New York, surveyed Aug., 1898. Chas. S. Voorhies, C. S.

II 28.—Pierhead and Bulkhead lines for the water fronts of part of the City of New York and for the adjacent New Jersey shore as recommended by the New York Harbor Line Board, March, 1901. Approved Feb. 15, 1902.

II 31.—Map of Gowanus Bay, showing the lines described by the Commissioners for the preservation of the Harbor of New York from encroachments, in pursuance of the act entitled, "An Act to authorize Daniel Richards and others to construct and build docks, etc.," passed April 19, 1856—Chap. 203. Surveyed for the Commissioners by U. S. Coast Survey, A. D. Bache, Supt., June, 1856. Map No. 302. Filed Jan. 7, 1857 [in Kings County Clerk's Office].

II 37.—Topographical Bureau—Map showing a change in lines of the street system heretofore laid out in the territory bounded by 27th Ave., Ave. V, 86th St., Ave. X, E. 13th St., Canal Ave. and Gravesend Bay. Dated Dec. 29, 1908.

II 42.—Topographical Bureau—Map showing a change in the lines of the street system bounded by Leyden St., etc., and the United States Bulkhead line of Newtown Creek. Dated Nov. 11, 1908.

KK 17.—Chart of Pier and Bulkhead lines of Gowanus Bay, New York Harbor, as recommended by the special Board of 1875. [Map No. 260, Secretary of State's Office, Albany.]

KK 24.—Topographical Bureau—Map showing the change of lines of Canal Ave. and Gravesend Ship Canal, from E. 12th St. to Shore Boulevard, and in the street system between Emmons Ave. and Sheepshead Bay. Dated Sept. 20, 1909.

KK 28.—Map of the property of the Manhattan Beach Hotel and Land Co., Ltd., showing High and Low Water and Sedge lines, and proposed marginal street and Bulkhead lines for the purpose of adjustment of property lines. April, 1904. Map No. 1453, filed Nov. 16, 1904.

KK 49.—Map of Gravesend Bay and vicinity New York Harbor, N. Y., showing Pierhead and Bulkhead lines. Copied from map of the Town Survey Commission, to which has been added—The Pier and Bulkhead lines established by Chap. 763, laws of 1857—The Pier line recommended by the Special Board of 1875—The Pier and Bulkhead lines approved by the Secretary of War, March 9, 1892. [On file in Dock Department.]

KK 52.—Map of the shore line of Gowanus Bay, on which are laid down the Bulkhead and Pierheads as established by the act of Legislature of April 17, 1857. Drawn by Boschke, A. Kurth and Rosa, C. E. and S., July, 1857. [H. C.'s Atlas; sheet No. 24; Gowanus Bay Basins.]

L 125.—Map of the Pierhead and Bulkhead lines at Gravesend. [Coney Island—one of the sheets prepared by the Dock Department.]

N 82.—Survey of the property of the Manhattan Beach Hotel and Land Co., Ltd. Chas. S. Voorhies, C. E., Nov., 1904 [similar to KK 28].

N 123.—Pierhead line for the Easterly shore of Upper New York Bay, between Coffey and Conover sts., Red Hook, Borough of Brooklyn, New York City, as recommended by the New York Harbor Line Board, Feb., 1907. Approved April 4, 1907.

N 124.—Map showing line established by act of Congress passed June 3, 1896.

N 125.—Modification in the Bulkhead line for the Easterly shore of Gravesend Bay, New York, between Fort Hamilton and Coney Island, as recommended by the New York Harbor Line Board, Jan., 1907. Approved Jan. 29, 1907.

N 126.—Modification in the Pierhead and Bulkhead Lines on the Easterly shore of Buttermilk Channel, extending from Coffey St., to Hamilton Ave., City of New York, Borough of Brooklyn, as recommended by the New York Harbor Line Board, Jan., 1902. Approved, Feb. 24, 1902.

N 127.—Modification in the Pierhead and Bulkhead lines at Cob Dock, U. S. Navy Yard and vicinity, Wallabout Bay and Channel, New York City, Borough of Brooklyn, as recommended by the New York Harbor Line Board, Nov., 1901. Approved, Dec. 19, 1901.

O 31.—Map of several pieces of land situate in the Town of Bushwick, Kings Co., belonging to James B. Taylor.

Q.—Maps Nos. 1 and 2 of Newtown Creek, made under the direction of Commissioners appointed by the Supreme Court pursuant to an act of the Legislature, passed May 3, 1869. Exhibiting the exterior lines of said creek as recommended by said Commissioners and the lines of the existing Piers, Wharves and Bulkheads, and also the original shore line. Brooklyn, Dec., 1869. J. V. Meserole, City Surveyor. Maps Nos. I and Ia, filed Sept. 27, 1870.

R. 22.—U. S. Navy Yard and Hospital Grounds, showing all tracts of land conveyed to the United States and jurisdiction lines established by the State of N. Y.; also original High and Low water lines. Feb. 15, 1875.

S.—Map of Water fronts on East River, at Bushwick Inlet, Brooklyn, E. D. showing 1st The Pier and Bulkhead lines established by Act of April 17, 1857, 2nd, The permanent line of Grants for Williamsburgh by acts of '35 and '37, and for Greenpoint by act of 1849, 3rd, The alteration of Pier and Bulkhead lines as proposed. Copied from the map of the Harbor Commissioners by R. Rosa, surveyor. Filed, June 5, 1865, in the office of the Secretary of State, at Albany.

T 25.—Map defining a division line between the U. S. Naval property and the property of Abraham A. Remsen, May 4, 1848. Map No. 445, filed June 2, 1848.

U 4.—Map of property belonging to Col. Daniel Richards in the Sixth Ward, City of Brooklyn. Sur., Feb., 1847, by Willard Day, C. S., Map No. 356, filed Jan. 18, 1848.

U 23.—Map of several pieces of land situate in the Town of Bushwick, belonging to Schermerhorn Banker and Co., and a correct description of the grant to them by the Commissioners of the land office. Dated, Feb. 10, 1851.

V 3.—Daniel Richards, Map No. 4, of property in the 12th Ward, of the City of Brooklyn. Sur. by George H. Day, May, 1855, Map No. 567, filed Feb. 17, 1857.

V 19.—Map of property at Williamsburgh, L. I., showing the permanent water line of the East River and Bushwick Inlet at high and low water. Surveyed by Isaac H. Herbert, Village Surveyor, March, 1837. Map No. 674, filed May 11, 1837. P. I. Fish and others.

X 15.—Map No. 2. Map of property in the 12th Ward, of the City of Brooklyn, belonging to William Beard and J. P. Robinson. Surveyed by L. N. Vibbard, March 16, 1885. Map No. 1120, filed April 16, 1885.

Y 44.—Pierhead and Bulkhead Lines for the Easterly shore of East River, Buttermilk Channel, Upper New York Bay and the shores of Gowanus Bay, from Broadway Ferry, Brooklyn, E. D., to the Northern boundary of the Government Land at Fort Hamilton as recommended by the New York Harbor Line Board, Feb., 1890. Approved, March 4, 1890.

Y 47.—Map of property in the Town of Gravesend, L. I., belonging to Samuel T. Gerritsen, Esq. Surveyed, April, 1868, by Silas Ludlam, C. S.

Y 68.—Map of the shore of the East River between Newtown and Bushwick Creeks, showing the owners of the land on the same, with water privilege in front. New York, Sept., 1848. Surveyed by Daniel Ewen, C. S. Map No. 318, filed April 27, 1849.

Y 69.—Pierhead and Bulkhead Lines for the Easterly Shore of East River, New York, from Broadway Ferry, Brooklyn, E. D. to Ravenswood, Long Island, as recommended by the New York Harbor Line Board, Jan., 1890. Approved, Feb. 8, 1890.

Y 70.—Map of Easterly shore of East River, New York, from Bushwick Creek to Grand St. Ferry, Brooklyn, E. D. showing the change in the Pierhead Line from North First St., North and East to the South abutment of bridge across Bushwick Creek, at Kent Ave., recommended by the New York Harbor Line Board, May, 1890. Approved, June 18, 1890.

Y 71.—Pierhead and Bulkhead Lines for Newtown Creek, New York, from Whale Creek Canal to Metropolitan Ave., on both branches of the creek as recommended by the New York Harbor Line Board, Dec., 1890. Approved, Dec. 29, 1890.

Y 72.—Pierhead and Bulkhead Lines for Gravesend Bay, New York Harbor, from Fort Hamilton to the Western end of Coney Island, New York, as recommended by the New York Harbor Line Board, Jan., 1892. Approved, March 9, 1892.

Y 73.—Permanent Line of the East River shore fronting the Village of Williamsburgh. Drawn, Feb., 1833, by D. Ewen, City Surveyor. Map No. 508, filed May 16, 1835.

Z 11.—Map No. 3. Map of property in the 12th Ward, of the City of Brooklyn, belonging to William Beard and J. P. Robinson. Surveyed by L. N. Vibbard, March 2, 1885. Map No. 1140, filed April 16, 1885.

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